Pulse

Owner's Manual

Everything you need to know
about your Pulse equipment

COMMANDER® Pulse

Commander Pulse

Owner's Manual

Rev 1
April 06

Table of Contents

1 Introduction....5
Important Safety instructions....5
Basic Requirements....7
Using this Document....7

2 Getting to know your Commander Pulse....9
Parts Check....9
Front Panel....10

3 Connecting Your Commander Pulse....11
Step 1: Siting your Commander Pulse Unit....11
Step 2: Connect your telephones and PSTN Line(s)....12
Fit the Cable Cover over the phone connections....13
Step 3 Internet Access Connections....13
Connecting to an external modem....14
Step 4 Connect the Power....14
Step 5 DECT Phones....15
Step 6 Connecting to the Internet....16
Cabling Keystations & Standard telephones....17
Wall Mounting the Commander Pulse....18
Keystation connections (underside of phone)....19
Attaching the keystation desk plinth....20
Wall-mounting a keystation....20
Door station....22
Power Fail Telephone....22

4 Basic programming using the Management Application....23
Basic PABX Settings....24
Basic Router Configuration for an ADSL connection....30
Basic Router Configuration for a Cable Modem connection....31
Date & Time Settings....33

5 Using Your Commander Pulse Phone System....34
System Description....34
Introduction to your Commander Pulse Phones....34
System Keystation....36
Using the DECT Handset....42
Keystation – Basic Call Features....46

Using a Standard or DECT Handset....54
Additional Call Features....58
Station Set-Up options....64
Incoming Call Handling....66
Using Voicemail....67
Remote Notification of Voice Messages....70
Programming Additional System Options....74
6 Connecting to the Internet....76
ADSL Modem configuration....76
Types of Internet Access....76
Configuring a PPPoA ADSL connection....76
Configuring a PPPoE ADSL connection....78
Configuring a DHCP ADSL connection – RFC 1483....82
Changing the ADSL Modem Operating Mode....85
Connecting to an External ADSL Modem, Cable Modem, LAN, WAN or add a host to the DMZ....86
Password....90
DHCP Server....92
Addressing....95
Changing the LAN IP address and subnet mask....95
7 PABX Configuration using the web interface....97
Incoming Ringing....98
System Settings....99
Station Settings....102
Line Settings....108
Line Forwarding....109
Class of Service....110
Timers....112
LCR Programming....113
CLI Routes....115
Outgoing Restriction....116
8 Advanced Router Settings....118
Wireless Setup / Security....118
Firewall....131
Diagnostics....144
Firmware Update....150
System Resets....153
A Configuring Your Commander Pulse via the Keystation....155

To enter system programming 155
System Setup Options 155
Using Voicemail 166
Programming Additional System Options 172
Miscellaneous system configuration options 173
To configure PSTN lines 176
To set system timers 179
To reset your system 180
B DECT Handset Detailed Instructions 181
C IP Addresses, Network Masks & Subnets 193
IP Addresses 193
Subnet masks 194
D Glossary 195
E Configuring your PCs 202
Configuring Ethernet PCs 202
F Troubleshooting 207
Cannot browse the Internet 207
Troubleshooting your Cordless Phone 212
Troubleshooting the PABX 213

1 Introduction

Congratulations on becoming the owner of the Commander Pulse combined voice & data communications system. You will now be able to access the Internet using your high-speed DSL connection, share your phone connection between fixed & cordless handsets

This User Guide will show you how to connect Commander Pulse gateway, and how to customize its configuration to get the most out of your new product.

Important Safety instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Read and understand all instructions.
- Follow all warnings and instructions marked on the product.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water (for example, in a wet basement).
- Do not place this product on an unstable cart, stand, or table. The product can fall, causing serious damage to the product.
- Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating; these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
- This product should be operated only from the type of power source indicated in the manual. If you are not sure of the type of power source to your building, consult your dealer or local Power Company.
- The mains power socket outlet must be located near the product and must be easily accessible to allow plugging/unplugging.
- Do not allow anything to rest on the power cord. Do not locate this product where persons walking on it will abuse the cord.
- Do not use a station cord with this product's AC power cord. The AC outlet for this product should not be used for any other electrical equipment.
- Never push objects of any kind into this product through cabinet slots as they can touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

- To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers can expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electric shock when the product is subsequently used.
- Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - When the power supply cord or plug is damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally by following the operating instructions.
- Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls can result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
- If the product has been dropped or the cabinet has been damaged.
- If the product exhibits a distinct change in performance.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There can be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

Basic Requirements

In order to use all the features of the Commander Pulse system, you must have the following:

- ADSL service up and running on your telephone line (or an equivalent broadband Internet access).
- Instructions from your ISP on what type of Internet access you will be using, and the addresses needed to set up access.
- One or more computers each containing an Ethernet card (10Base-T/100Base-T network interface card (NIC)).
- For system configuration using the supplied web-based program: a web browser such as Internet Explorer v4 or later, or Netscape v4 or later. Note that version 4 of each browser is the minimum version requirement – for optimum display quality, use Internet Explorer v5, or Netscape v6.1.

Note

You do not need to use a hub or switch in order to connect more than one Ethernet PC to your Commander Pulse. Instead, you can connect up to four Ethernet PCs directly to your Commander Pulse using the ports labeled on the rear panel.

Using this Document

Notational conventions

Acronyms are defined the first time they appear in the text and also in the glossary.

The term LAN refers to a group of Ethernet-connected computers at one site.

The term WLAN refers to a group of Wireless-connected computers at one site.

Typographical conventions

Italic text is used for items you select from menus and drop-down lists and the names of displayed web pages.

Bold text is used for text strings that you type when prompted by the program, and to emphasize important points.

Special messages

This document uses the following icons to draw your attention to specific instructions or explanations.

Note

Provides clarifying or non-essential information on the current topic.

Definition

Explains terms or acronyms that may be unfamiliar to many readers. These terms are also included in the Glossary.

WARNING

Provides messages of high importance, including messages relating to personal safety or system integrity.

2 Getting to know your Commander Pulse

Parts Check

In addition to this document on CD, your package should arrive containing the following:

1 Commander Pulse Unit

1 Power Supply Commander Pulse (PSU)

1 Documentation Pack

1 Yellow (Ethernet LAN) cable RJ-45

1 Gray line cable (RJ-11 to RJ11)

1 Blue (Ethernet WAN) cable RJ-45

1 Cordless handset & charger

1 Main distributor frame cover (MDF)

1 Violet ADSL cable (RJ-11 to RJ-11)

Front Panel

The front panel contains a 'Page' button and lights called Light Emitting Diodes (LEDs) that indicate the status of the Commander Pulse.

Pressing the 'Page' button rings all the cordless handsets registered to the Commander Pulse.

Label	Color	Function
Power	*Off*	*Power not connected to the Commander Pulse*
	Red	*Powering up or Commander Pulse malfunction*
	Flashing Red/Green	*Cordless phone registration mode*
	Green	*Power on*
Ethernet	*Off*	*No Commander Pulse connected to the LAN*
	Solid Green	*Powered Commander Pulse connected to the LAN*
DSL	*Green Flashing slowly*	*ADSL line not connected*
	Green flashing fast	*ADSL line Connected and synchronizing*
	Green. (Occasional flicker)	*ADSL line connected and synchronized*
Internet	*Off*	*ADSL line not connected*
	Red	*Commander Pulse attempted to make an IP connection and failed. Usually indicates that the Internet User Name or Password is incorrect.*
	Solid Green	*Commander Pulse is IP connected and no traffic is detected*
	Flashing Green	*Commander Pulse is IP connected and traffic is detected*
Wireless	*Off*	*Wireless LAN is disabled*
	Solid Green	*Wireless LAN is enabled*
	Flashing Green	*Wireless LAN is active with traffic in either direction*

3 Connecting Your Commander Pulse

These instructions are a guide to the installation and basic configuration of the Commander Pulse.

Step 1: Siting your Commander Pulse Unit

Environment
The Commander Pulse must be located in dry area and not exposed to excessive levels of heat, dust, damp or high humidity. The Commander Pulse should not be located near sources of electromagnetic radiation, such as large electrical systems, electrical motors, lift machinery, electric arc welders, refrigerators, air conditioners, etc.

Power point locations
The Commander Pulse requires its own dedicated power point. Do not share the power point with large current appliance such as air conditioners, photocopiers, fridges, fax machines etc. An extension power cord should not be used to reach the power point.

Telephone line socket locations
Two PSTN phone lines can be connected to the Commander Pulse. You will need to identify were these sockets are. If these sockets are not located in the near vicinity of where you require the Commander Pulse, additional cabling is required. A licensed ACMA cabler must install this cabling.

Locating the unit for optimum wireless coverage
The unit is equipped with two wireless transmitters. There is one transmitter for DECT phones and one for a wireless LAN that allows PCs to communicate over a wireless connection.

The range of the cordless phones and wireless LAN is affected by the orientation of the Commander Pulse, the number of solid walls between the unit and the cordless phones or wireless PCs, and / or other interfering signals in the environment.

For best results locate the unit on the ground floor with the front of the unit facing towards the desired working area. The range of the wireless LAN is shorter than the cordless phones so the areas where wireless PCs are used will, in most cases, determine the optimum location for the unit.

DECT Range

The line of sight range between the Commander Pulse DECT transmitter and the DECT phones is 300m. This range is achieved in a perfect environment with nothing between the Commander Pulse and the DECT handset. This range is reduced when used indoors by the factors mentioned above. The symbol on your handset indicates when you are in range. If you move too far away from the Commander Pulse during a call your phone will sound an alert tone and will flash.

Wireless LAN range

The line of sight range between the Wireless LAN transmitter and a wireless PC is 30m. This range is achieved in a perfect environment with nothing between the Commander Pulse and the PC. This range is reduced when used indoors by the factors mentioned above.

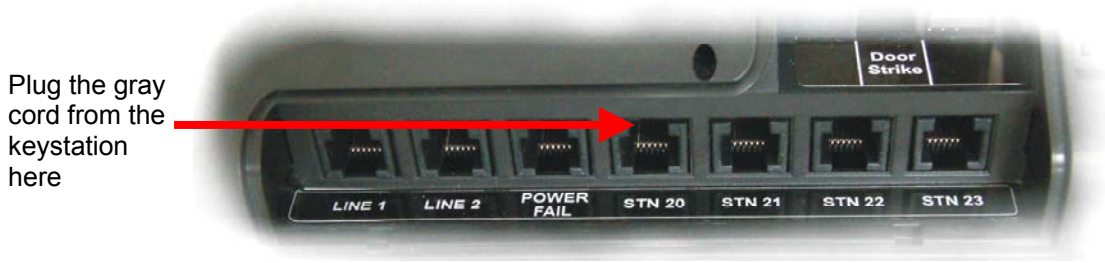
Keystations location

The keystations have a 3m cord. This means that the keystations can be up to 3 meters from the Commander Pulse before additional telecommunications cabling is required. A licensed ACMA cabler is required to install the cabling.

Step 2: Connect your telephones and PSTN Line(s)

Connect the wired telephones to the Unit

If your Commander Pulse has come with a Commander Keystation please plug this into the socket labeled “Stn. 20” on the back of the Commander Pulse. Otherwise plug your standard phone into the “Stn. 20” socket

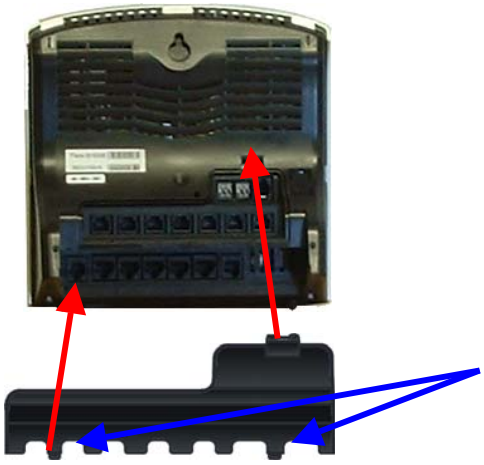


If you are installing additional wired telephones connect them to the “Stn. 21” – “Stn. 23” sockets. If the phones are to be installed in locations where cabling is required this cabling must be done by a licensed ACMA cabler.

Plug in your PSTN Line(s)

Plug the gray phone line cable into to the Line 1 socket at the back of the Commander Pulse unit. The other end of the gray cord is to plugged in to the phone socket on the wall or the ADSL filter. If you have a second line please plug the other gray line cable into the Line 2 socket.

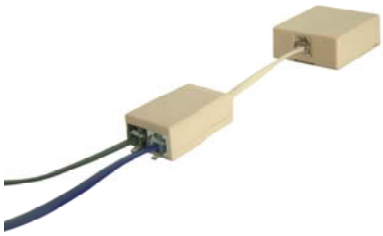
Fit the Cable Cover over the phone connections.



Step 3 Internet Access Connections

Connecting to an ADSL Line

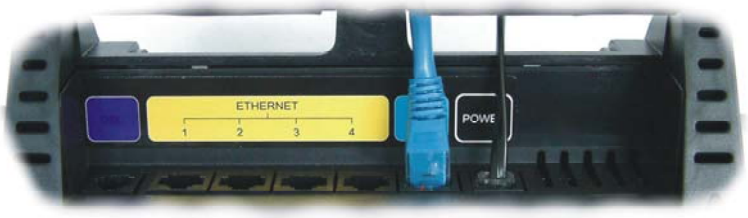
If you are connecting to the Internet via another modem (e.g. iBurst, Cable modem etc) please proceed to “Connecting to an External Modem” below.
If you are connecting to the Internet directly over an ADSL line both the ADSL line and the PSTN Line provided with the ADSL service should now be connected to the Commander Pulse.
Plug the other end of the Line 1 gray cable (already connected to the Commander Pulse) into the phone socket on the splitter.
Plug one end of the violet ADSL cable into the ADSL socket on the splitter.
Plug the ADSL filter into the telephone socket on the wall.



Plug the other end of the violet ADSL cable into the socket labelled “DSL” at the back of the Commander Pulse.

Connecting to an external modem

I f you are connecting to the Internet via another modem (e.g. iBurst, Cable modem etc) connect the Blue cable provided to the Blue WAN connector on the back of the Commander Pulse.



Connect the other end of the blue cable to the LAN port on the external modem.

Step 4 Connect the Power

Power up the unit by connecting the AC power adapter to the Commander Pulse, connect the adapter to the power point and turn on the power point.

Note

The power cable is designed so that it will only fit into one socket on the back of the Commander Pulse unit. Do not force the plug into the socket.

It takes approximately 1 minute for the Commander Pulse to initialize. Wait until the power LED on the front of the Commander Pulse unit is a steady Green light.
You can make telephone calls now.

WARNING

If you have one PSTN line only you need to change the system programming so that the unequipped line position is not used. If this is not done every second time you dial 0 for a line the call will fail.

Programming instructions for Commander Pulses with one PSTN line.

1. From the programming station (by default, it is station 20), press the “Program” button, located on the top left-hand side of the display of the keystation.
2. Press the Scroll Down Key (↘) until “System programming” is displayed.
3. Select “System programming”.
4. Enter the System Programming Password and select ’*Lines*’.

5. Press the Scroll Down Key (↘) until *'Equipped lines'* is displayed.
6. Select *'Line 2'*. The symbol beside line 2 changes from "♦" to "◊" indicating the line is not equipped.

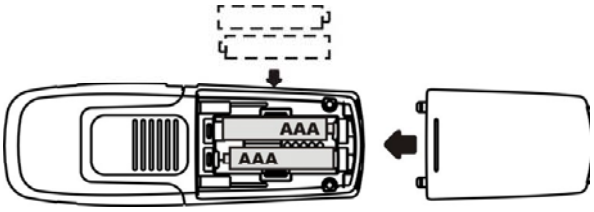
Note

If you do not have a keystation see the "PABX Configuration using the web interface" section in the Owner's manual for instructions on programming the number of equipped lines

Step 5 DECT Phones

Assemble your DECT Phone

Place the 2 rechargeable NiMH batteries size AAA 1.2V 750mAh (included), observing their polarities, into the battery compartment of the handset.
Slide the battery door firmly into place.



Place the handset on the charger unit and let the batteries charge for a full 14 hours before using it for the first time. The handset may get warm during initial charge.

Register the DECT phones.

Press the "Page" button for **4 seconds**. This button is located on the front of the Commander Pulse. This places the Commander Pulse in registration mode for 30 seconds.

Page Button

Note

You will know that the Commander Pulse is in registration mode when the power led flashes red and green

1. On the DECT handset, press *'REG'* on the DECT phone
2. Press *'OK'* for 'REGISTER'
3. Enter the PIN number of 1234
4. Press *'OK'*

The DECT handset is now registered to the Commander Pulse

Note

Pressing the "Page" button normally (for less than 2 seconds) rings all DECT phones registered to the Commander Pulse. This can be used to locate misplaced DECT phones.

Safety precautions:

Do not allow the DECT handset to come into contact with liquids or moisture.
Do not allow the charging contacts or the battery to come into contact with conductive materials.
Do not use the handset in an explosive hazard area such as where there is gas leaking.
Because the DECT handset works by sending radio signals between the base unit and the handset, wearers of hearing aids may experience interference in the form of a humming noise.
We advise that this DECT handsets should not be used near intensive care medical equipment or by persons with pacemakers.
Your DECT handset can interfere with electrical equipment such as answering machines, TV and radio sets, clock radios and computers if placed too close. It is recommended that you position the Commander Pulse at least one meter from such appliance

WARNING

Use only the mains adapter supplied with the DECT handset. Incorrect adapter polarity or voltage can seriously damage the DECT Handset. Input: 230 VAC 50 Hz Output: 9 VDC 300 mA.

WARNING

THERE IS A RISK OF EXPLOSION IF THE BATTERY IS REPLACED BY AN INCORRECT TYPE. Never use non-rechargeable batteries. Use two rechargeable NiMH batteries, size AAA 1.2V 750mAh (HR10/44) only. NiMH batteries must be disposed of in accordance with the applicable waste disposal regulations.

Step 6 Connecting to the Internet

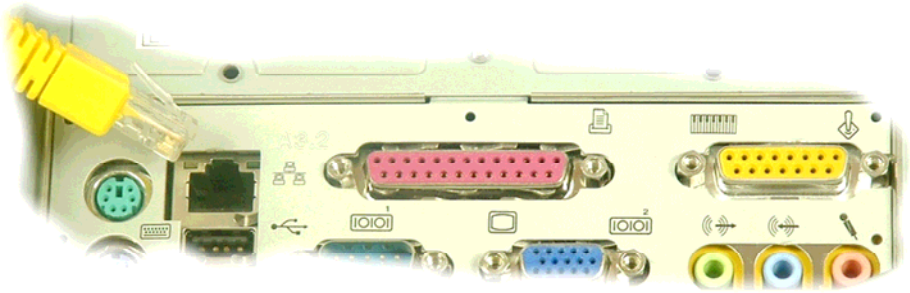
Connecting the Commander Pulse to Internet directly over an ADSL line

Important : Before connecting your Commander Pulse unit to the internet you must first obtain the required information from your Internet Service Provider.
The information required from your ISP is:

- Your Username for your service (e.g. yourname@commander).
- Your Password (remember your password is case sensitive).
- VCI value (usually it is a value of 8).
- VPI value (usually it is the value of 35).

Whether your internet connection is PPPoA or PPPoE.

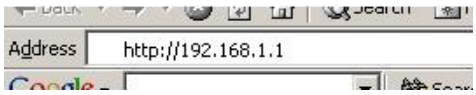
a. Connect the yellow LAN cable to the LAN connector on your PC.



b. Connect the other end of the yellow cable to the Commander Pulse.

c. Turn on your PC and open your web browser, (e.g. Internet Explorer)

d. Type in the web address of http://192.168.1.1 into your web browsers address line and press enter.



Continue with programming as described on Page 23

Cabling Keystations & Standard telephones

Pulse keystations & Standard telephones can be connected directly to the system using the telephone cord. If you wish to locate the phone further away from the Commander Pulse cabling must be installed by a qualified ACMA cabler.

WARNING

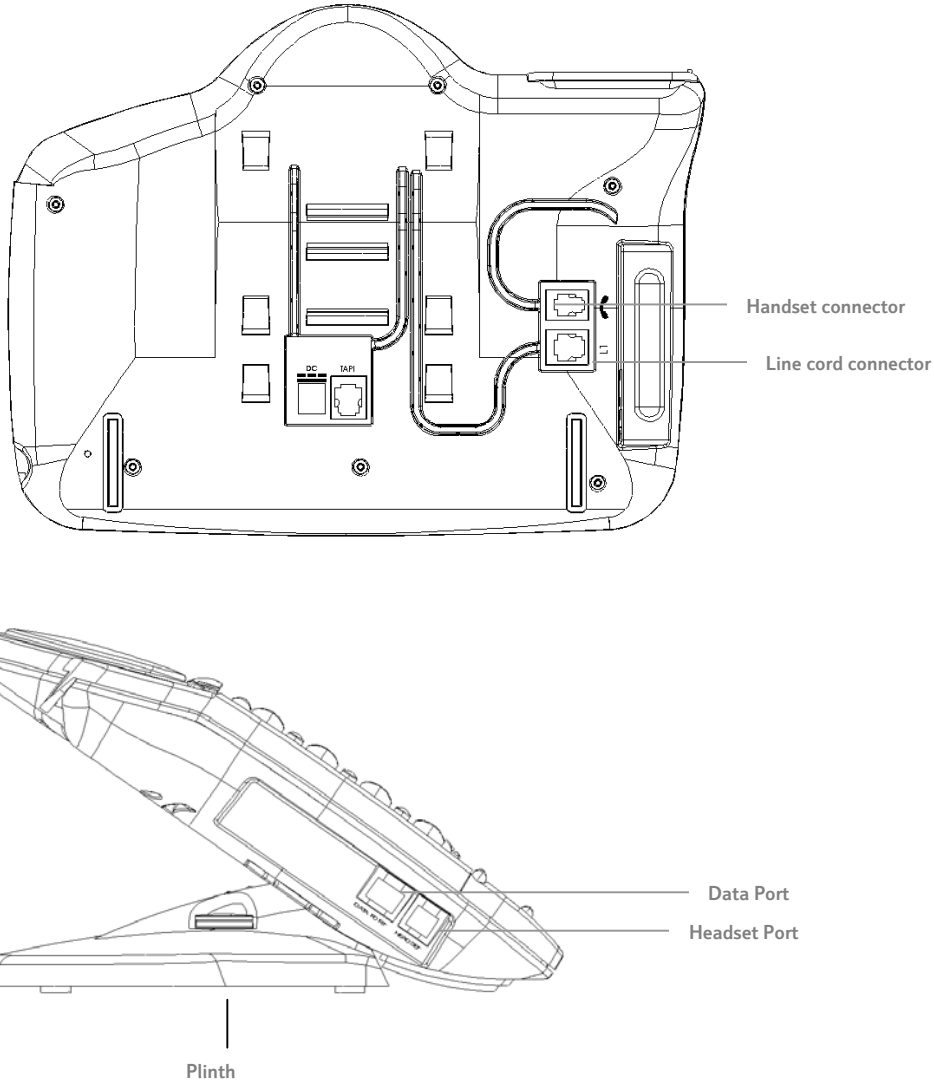
Cabling must be installed by a qualified ACMA cabler.

Wall Mounting the Commander Pulse

The Commander Pulse can be wall mounted. You can print this page and use it as a template for locating the wall mounting screws supplied

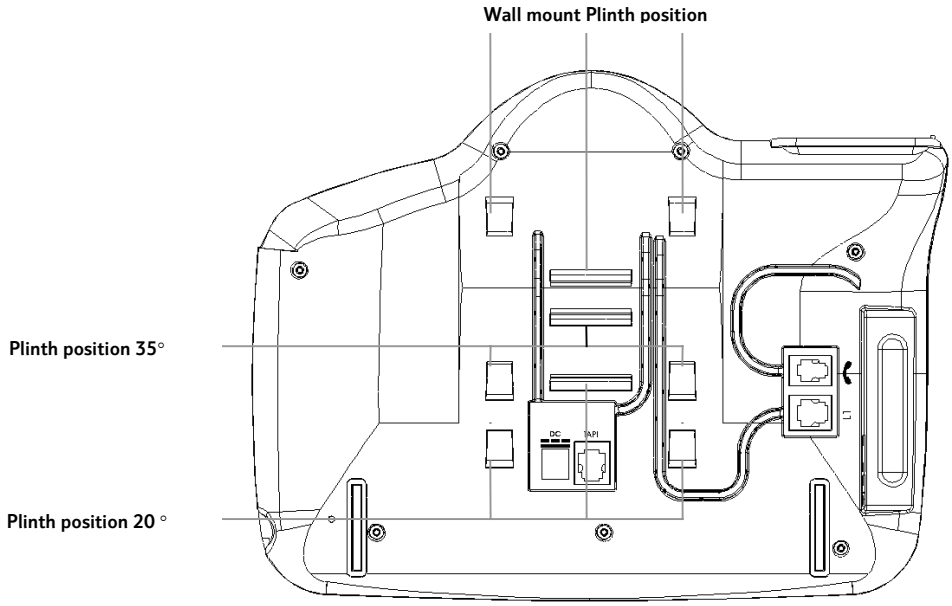
1 to 1 Template (Letter size paper)

Keystation connections (underside of phone)



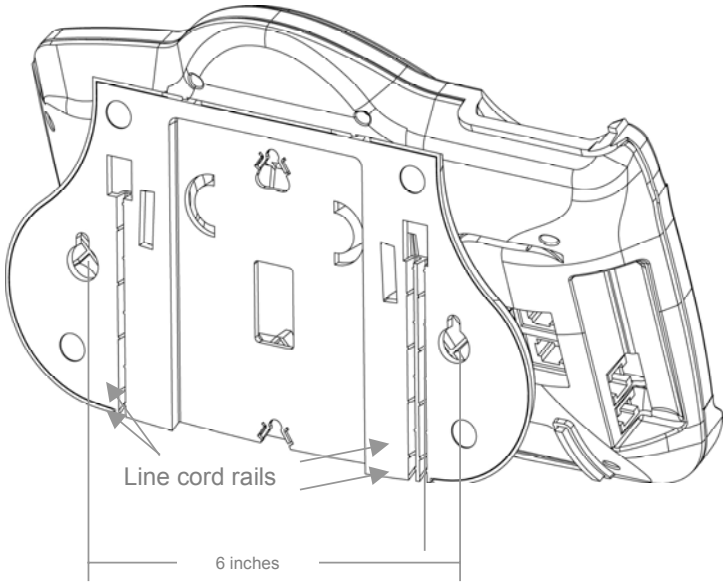
Attaching the keystation desk plinth

The desk plinth allows you to mount the keystation at two angles.

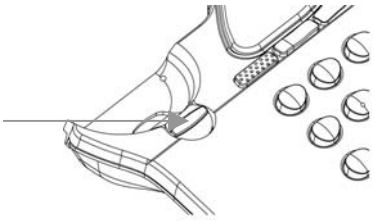


Wall-mounting a keystation

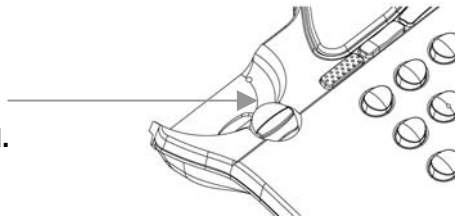
The phone plinth is inverted on the base to wall mount the phone.
Locate, drill and plug the 2 screw locations as shown below. The holes should be deep enough to accept a 2.5 cm screw. Insert the two screws leaving sufficient space to clip the base over them. Locate the phone and base over the screws.



Wall hook when the keystation is in a 20 degrees or 35 degrees position

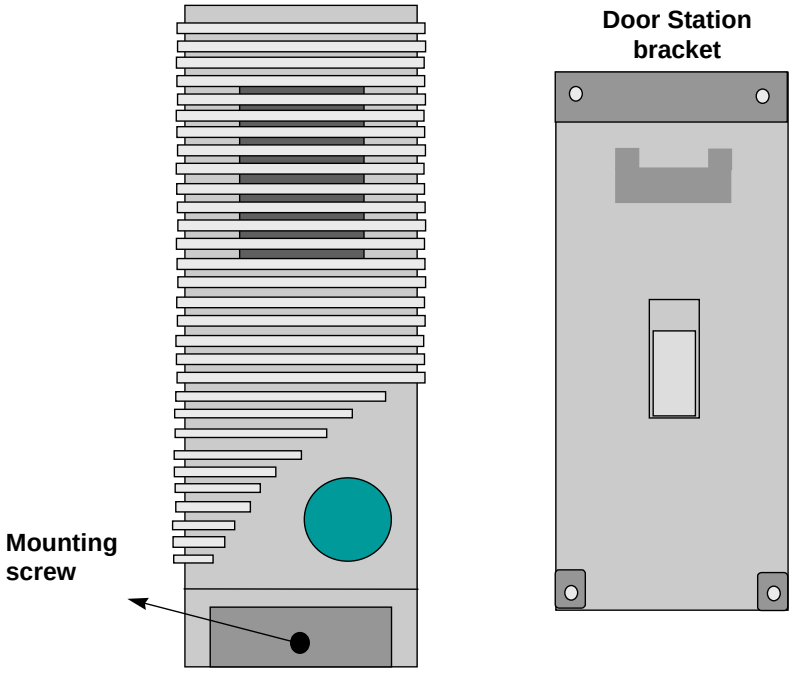


Wall hook when the keystation is wall mounted.



Door station

The door station is connected to station 23.



Connect the single pair from the door station to the AB connections on station 23.

WARNING

Cabling must be installed by a qualified ACMA cabler.

The system must be programmed to recognize the door station See page 172 for programming via a keystation and page 100 for configuration via the Web Management application.

Power Fail Telephone

Connect a standard analogue telephone to the Power Fail connector. When the Commander Pulse is switched off the Line 1 is switched through to this phone and you can make and receive calls on it until the power is restored.

4 Basic programming using the Management Application

The Commander Pulse includes a series of Web management pages that provide an interface to the software installed on the Commander Pulse. It enables you to configure the Commander Pulse. By accessing the Management application through your web browser from any PC connected to the Commander Pulse via the wired or wireless LAN.

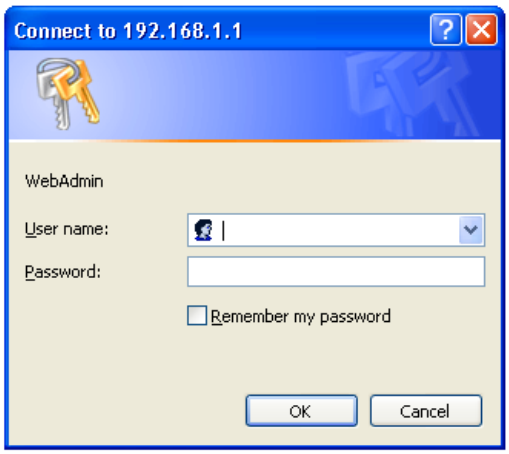
Note

By default the Wireless network card in the Commander Pulse is disabled. This is as a security measure to prevent unauthorized access to the Commander Pulse. To turn the Wireless network on, see Page 118.

Open a Web Browser such as Internet Explorer or similar on the PC.

Go to the Management Application of your Commander Pulse by entering the following address into the web browser, **http://192.168.1.1**

The following Log In screen is displayed.



Enter your user name and password.

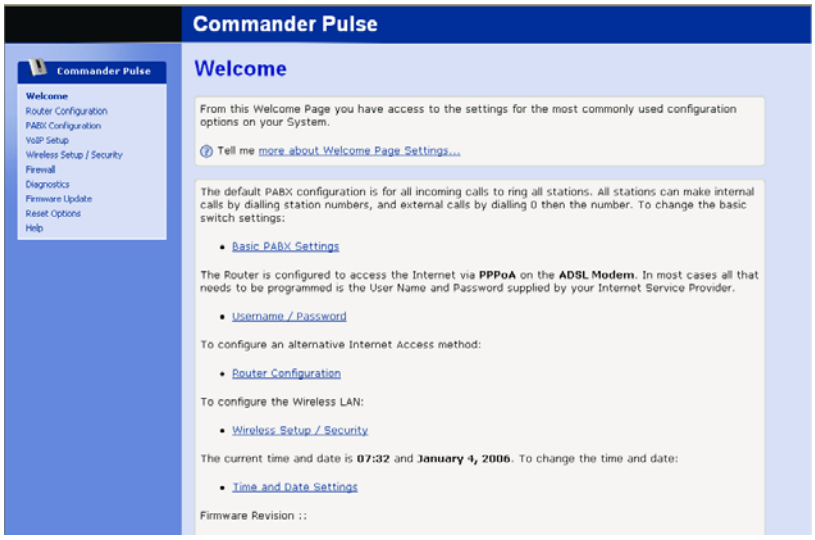
The first time you log into the program, use these defaults:

User Name:	**admin**
Password:	**admin**

Note

You can change the password at any time or you can configure your Commander Pulse so that you do not need to enter a password. See Password on page 90

1. Click *OK*. The *Welcome* page is displayed:


Commander Pulse
Commander Pulse
Welcome
Router Configuration
PABX Configuration
VoIP Setup
Wireless Setup / Security
Firewall
Diagnostics
Firmware Update
Reset Options
Help
Welcome
From this Welcome Page you have access to the settings for the most commonly used configuration options on your System.
Tell me more about Welcome Page Settings...
The default PABX configuration is for all incoming calls to ring all stations. All stations can make internal calls by dialling station numbers, and external calls by dialling 0 then the number. To change the basic switch settings:
Basic PABX Settings
The Router is configured to access the Internet via PPPoA on the ADSL Modem. In most cases all that needs to be programmed is the User Name and Password supplied by your Internet Service Provider.
Username / Password
To configure an alternative Internet Access method:
Router Configuration
To configure the Wireless LAN:
Wireless Setup / Security
The current time and date is 07:32 and January 4, 2006. To change the time and date:
Time and Date Settings
Firmware Revision ::

Note

If you receive an error message or the Welcome page is not displayed, see Configuring your PCs on page 202.

This is the first page displayed each time you log in to the Web

It provides links to the programming pages that are most commonly used.

This page contains links to the following pages:

- Basic PABX Settings. (The most common settings for the telephone system).
- Username / Password. (In most cases entering the Internet user name and password is all that is required to allow Internet Access via the internal ADSL Modem).
- Router Configuration (This is only required if you are using a Cable modem or private network).
- Wireless Security / Setup. (To set up a wireless connection to your PC(s).
- Time and Date Settings (To set the Time and Date on the phone system).

Basic PABX Settings

From this page you can configure the most commonly used telephone system functions, which are:

- Incoming Ringing. Selecting the phones that ring for incoming calls.
- Station Names. Programming station names so that the names rather than station numbers used on the keystation.
- Outgoing Restriction. You can restrict stations from making calls on particular lines.

- Station Class of Service. Restricting phones from making particular types of call e.g. International calls
- Cordless phone Registration. The cordless phones must be registered on the system before they can be used to make telephone calls
- Line Divert. On Power up incoming calls are forwarded to the Answering Machine if they are not answered within 18 seconds. The forwarding set for each line can be changed or cancelled

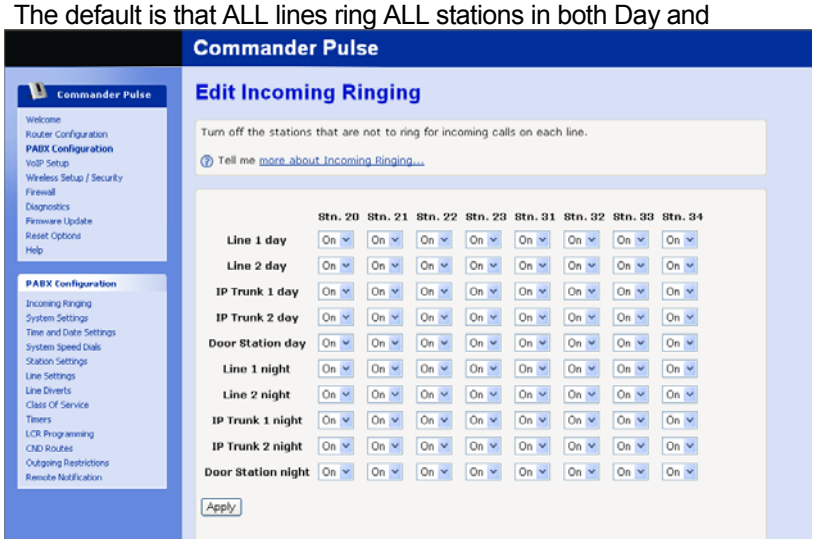
Incoming Ringing

You can determine which phones ring for incoming calls. Calls on each line can be set to ring different phones. You can also have different phones ringing when the system is in night mode.

For example, in DAY mode, all calls on Line1 might ring all phones, but in NIGHT mode all calls on Line 1 might be set to only ring station 20.

To change the settings, select ON or OFF from the relevant drop down box for the Line/Station configuration you require.

The default is that ALL lines ring ALL stations in both Day and



WARNING

The Apply button must be clicked before the page is exited for the changes to take effect. The settings will be lost if this is not done.

Note

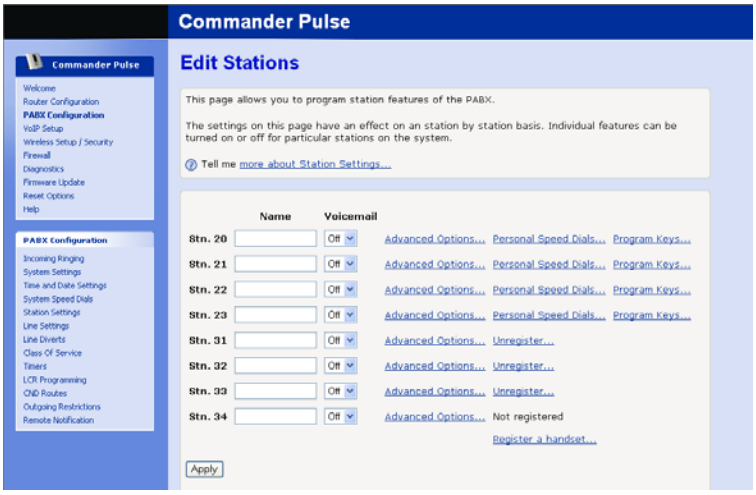
To set Night mode see page 66.

Station Names

The settings on this page have an effect on an station by station basis. Individual features can be set or unset for particular stations on the system.

You may assign names to stations. When an station receives an internal call, its 'display' will show the calling station name in the place of the calling station number.

To set the station name, left mouse click on the field and enter the name associated with the station.



A maximum of 10 characters per name can be entered.

Voicemail

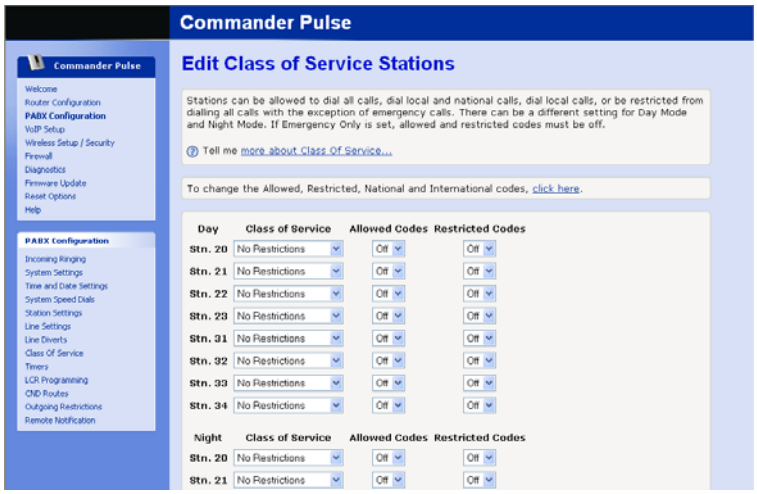
Use this setting to turn ON/OFF individual voicemail boxes for each station.

WARNING

The Apply button must be clicked when the names are entered and voice mail selected. Do not select any of the other options on the page until the Apply has been clicked or the settings for the names and voice mail will be lost.

Station Class of Service

The Class of Service feature allows the user to define barring settings for each station connected to the system restricting that station from making certain types of calls from the system.


Commander Pulse
Edit Class of Service Stations
Stations can be allowed to dial all calls, dial local and national calls, dial local calls, or be restricted from dialling all calls with the exception of emergency calls. There can be a different setting for Day Mode and Night Mode. If Emergency Only is set, allowed and restricted codes must be off.
Tell me more about Class Of Service...
To change the Allowed, Restricted, National and International codes, click here.
Day Class of Service Allowed Codes Restricted Codes
Night Class of Service Allowed Codes Restricted Codes

The following restrictions can be defined on a per station basis:

- No Restrictions
- Restrict International
- Local Only
- Emergency Calls Only
- By default ALL stations can dial ALL destinations.

WARNING

The Apply button, at the end of the page, must be clicked before the page is exited or any other link is selected for the changes to take effect. The settings will be lost if this is not done.

Day and Night Mode

There are different settings for Day Mode and Night Mode. To configure Day/Night mode see page 66

The Allowed and Restricted Codes

The Allowed & Restricted codes can be used to add greater flexibility to the allowed and restricted codes.
For example, if you wanted to restrict all International calls, except those to the UK (international code 001144...). In this case place the station in *Restrict International* in the Class of Service settings, and then set Allowed Codes to ON for the station in question.
In the International table enter 0011 in Index 1 and in the Allowed Codes list enter the dialing code for the UK (001144). These settings allow the caller to dial 001144 but restrict all other 0011 codes.
Similarly if you want restrict particular numbers enter them in the Restricted Codes list and set the Restricted Codes ON for the station.

Note

If 'Emergency Only' is set, Allowed and Restricted codes must be OFF.

Programming Class of Service Codes

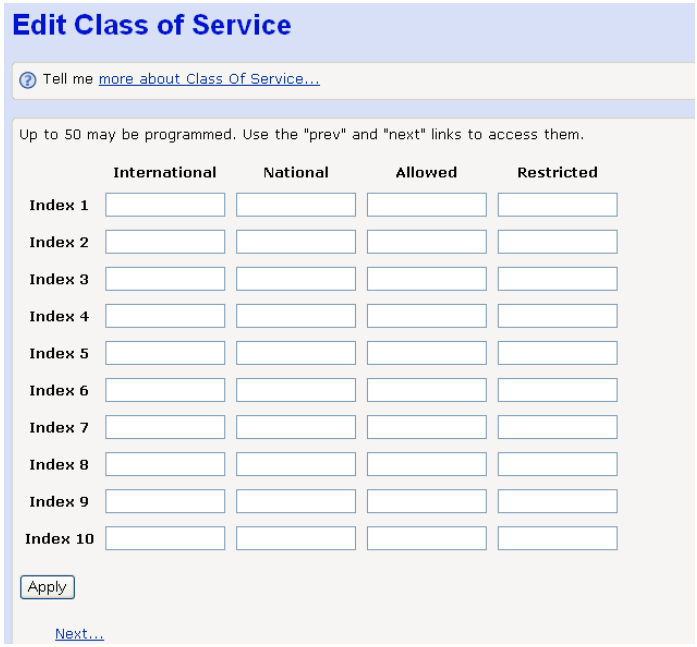
The definition of what constitutes Restricted, Allowed, National & International calls, is determined by the leading digits of the dialed number.

Thus, for example, numbers beginning with '0011xx' are International calls. Numbers beginning one '1xx' are local calls.

The definition of Allowed and Restricted codes is at the user's discretion.

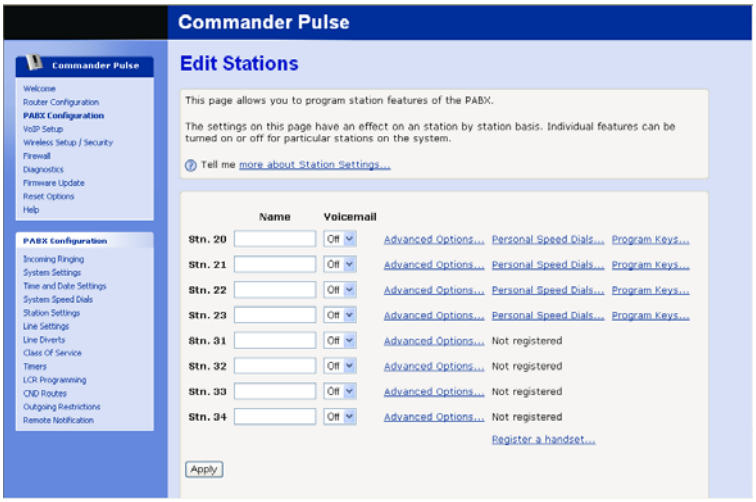
50 entries can be configured in the dialing codes for International, National, Allowed & Restricted numbers.

These dialing rules can be configured manually. See *'To change the Allowed, Restricted, National and International codes, click here'* on the '**Edit Class of Service Stations'** page.



DECT handset Registration

The DECT Handsets are shown as registered or not registered. When "*Register a handset"* is selected a prompt is displayed indicating that the 'REG' key on the cordless phone should be selected and that the PIN is 1234. The system is set in registration mode for 30 seconds

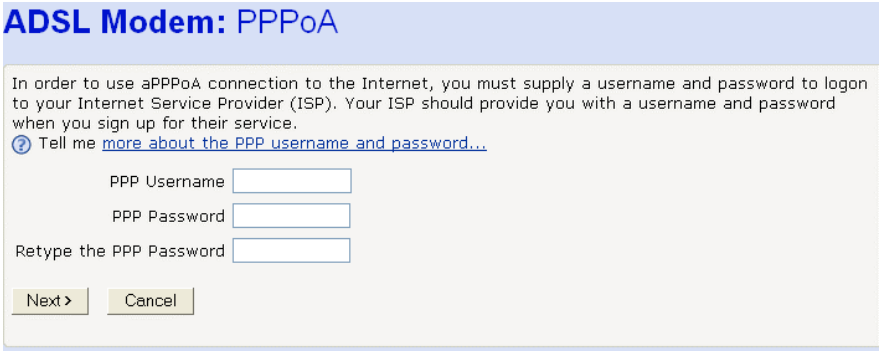


To unregister a DECT station, select "*Unregister".*

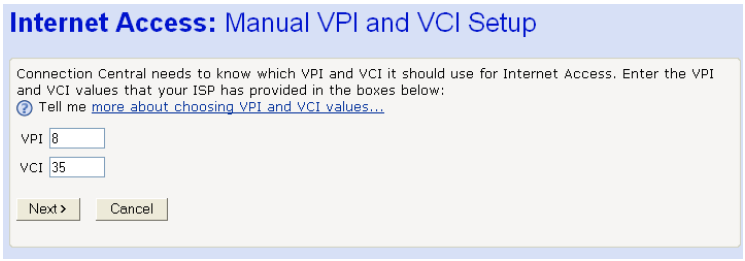
Username / Password

The default settings for Internet Access over an ADSL line are set so that the only settings that must be entered to access the Internet are the Username and Password as supplied with your ADSL service. In some cases the User Name only is supplied. In this case you enter the User Name only.

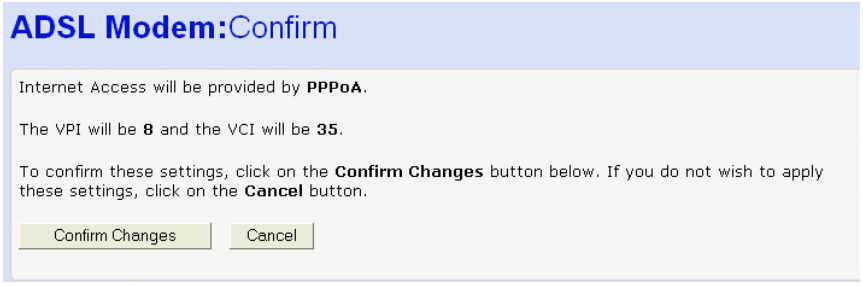
When User Name / Password is selected on the Welcome page the following page is displayed:


ADSL Modem: PPPoA
In order to use aPPPoA connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.
Tell me more about the PPP username and password...
PPP Username
PPP Password
Retype the PPP Password
Next >
Cancel

1. Enter the username and password or the username only if no password has been supplied. Type them in the relevant boxes,
2. Click "*Next>*". The following page is displayed:


Internet Access: Manual VPI and VCI Setup
Connection Central needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:
Tell me more about choosing VPI and VCI values...
VPI 8
VCI 35
Next >
Cancel

3. The settings of VPI =8 and VCI=35 are the default settings. If you have been provided with different settings from your ISP enter them here.
4. Click *Next*>. The following page is displayed:


ADSL Modem:Confirm
Internet Access will be provided by PPPoA.
The VPI will be 8 and the VCI will be 35.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

This page confirms your settings. If you are happy with your settings, click Confirm Changes. The Internet Access page is displayed.

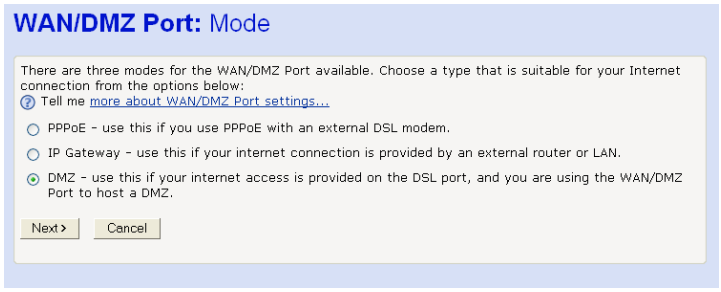
Basic Router Configuration for a Cable Modem connection

If your Internet access is provided by a cable modem the following programming is needed

1. Select *Router Configuration* from the main menu.
2. Select *WAN/DMZ Port* from the sub-menu. The following screen is displayed:

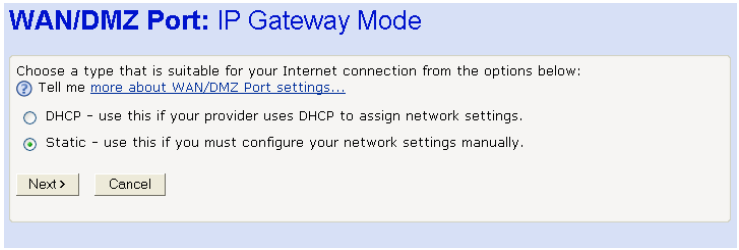
WAN/DMZ Port
The WAN/DMZ Port settings control how Connection Central uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port hosts a DMZ.
Change the WAN/DMZ Port settings here...
The DMZ IP Address is 192.168.0.1.
The DMZ Subnet Mask is 255.255.255.0.
Change the DMZ IP address here...

Select the *Change the WAN/DMZ settings here*. The following


WAN/DMZ Port: Mode
There are three modes for the WAN/DMZ Port available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about WAN/DMZ Port settings...
PPPoE - use this if you use PPPoE with an external DSL modem.
IP Gateway - use this if your internet connection is provided by an external router or LAN.
DMZ - use this if your internet access is provided on the DSL port, and you are using the WAN/DMZ Port to host a DMZ.
Next >
Cancel

screen is displayed:

Select *IP Gateway* and *Next.* The following screen is displayed.


WAN/DMZ Port: IP Gateway Mode
Choose a type that is suitable for your Internet connection from the options below:
Tell me more about WAN/DMZ Port settings...
DHCP - use this if your provider uses DHCP to assign network settings.
Static - use this if you must configure your network settings manually.
Next >
Cancel

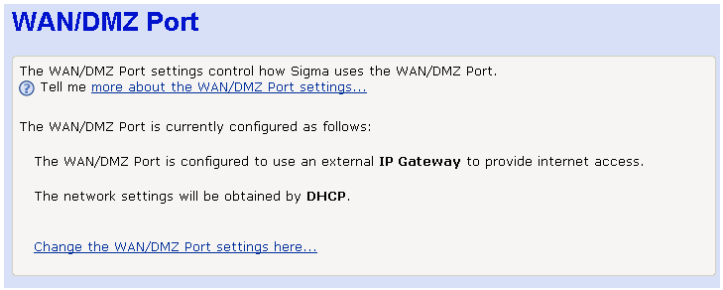
Two options are presented.

DHCP - automatically assigns IP addresses.
Static - allows the IP addresses to be entered manually.

If you have ***not*** been provided with a number of IP addresses select *DHCP*.
Click *Next.* The following screen is displayed

WAN/DMZ Port: Confirm
The WAN/DMZ Port will use an external IP Gateway to provide internet access.
The network settings will be obtained by DHCP.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

Select *Confirm Changes*.

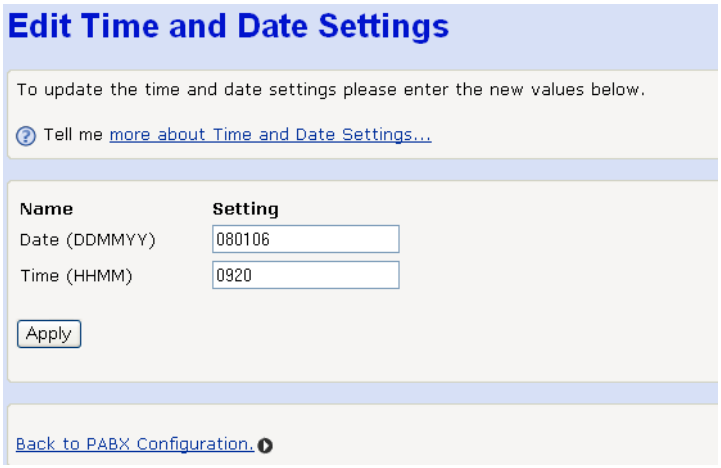

WAN/DMZ Port
The WAN/DMZ Port settings control how Sigma uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port is configured to use an external IP Gateway to provide internet access.
The network settings will be obtained by DHCP.
Change the WAN/DMZ Port settings here...

The setup is now complete.

If you have been supplied with a number of IP addresses the Static option should be selected. See the detailed description on page 88.

Date & Time Settings

Use this screen to program Time and Date settings for your system.



Date

Use this field to enter the system Date - the time is in the DDMMYY format, DD is the day, MM is the month, & YY is the year.
For example, 3rd May 2006 =030506

Time

Use this field to enter the system time - the time is in the 24-hour clock format.
For example 1:00pm is 1300

5 Using Your Commander Pulse Phone System

System Description

- The Commander Pulse is an Integrated Communications System supporting all your voice & data needs.
- The Commander Pulse can accommodate 2 PSTN lines.
- The Commander Pulse system can accommodate 4 wired keystations / Standard phones, as well as 6 cordless sets.
- The Commander Pulse keystation has a simple-to-use menu-driven interface.
- A door station is available that can be programmed to ring any station. It is connected to Station 23. A doorstrike output is also provided for activating an automatic door opener.
- External Music-on-Hold can also be used. This is provided using the optional Music-on Hold module. If installed it is to be connected to an station position (eg Station 20 to Station 23 only).

Introduction to your Commander Pulse Phones

There are four wired and four DECT handsets available on the Commander Pulse.

The wired stations can be equipped with a keystation or standard telephone.

The DECT stations are equipped with the proprietary Commander Pulse DECT Handsets.

The proprietary keystation and DECT handsets are designed to simplify the use of the system by providing integrated features on the stations.

Note

If a door station is installed it uses a wired station position (station 23) thus reducing the wired telephones to three. See page 100 for instructions on programming the door station.

Installing the External Music-on-Hold module also uses an station position. If both are installed the number of available wired telephones is reduced to two. See page 100 for instructions on programming the external Music on Hold module.

Getting Started

This section of your Owner's Manual is your guide to using the Commander Pulse system and its features, with either a keystation or a standard telephone. It also explains how to program system settings using your keystation.

Read the section '**System Keystation'** on Page 36 to understand how to operate the menus and use the other features of your keystation.

To get up and running with your keystation, read the section '**Getting Started – Basic Call Features** ' on page 46.

If you are using a standard telephone, read the section '**Using a Standard Telephone**' on page 54.

If you are using a DECT Handset, read the section '**Using a DECT Handset'** on page 42.

When you are ready to use additional call features, refer to the section '**Additional Call Features'** on page 58.

To control which numbers system users may dial, refer to **'Class of Service**' on page 67.

For '**Programming Additional System Options**', such as Door station & Doorstrike, see page 74.

Your Commander Pulse system comes with an integrated Voicemail functionality, as a result a number of powerful Voice Services are available. Details are given in **'Using Voicemail**' on page 67.

Introduction to your system keystation

The system keystations are highly featured display telephones for use with your Commander Pulse system.

It features a 4-line display that contains prompts and menus with selectable options. This unique menu-driven interface makes the system simple to use, and no codes are needed to program and activate features.

The keystation is also equipped with a data port, positioned on the left-hand side of the phone. This data port is used primarily for a modem from a PC to directly connect to the station.

System settings are also programmed via a keystation using the intuitive menu-driven interface, without the need for special codes.

The keystation has eight programmable keys, which are pre-programmed to access phone lines, and four function keys that group frequently used features.

The keystation is half duplex hands-free, so you can make calls, receive calls and use its features without lifting the handset.

Using the keystation display

The keystations' display presents various prompts and information, and provides selectable options to the station user.

Prompts and information

Prompts tell you what action to take, or warn of an incorrect action. For example, an attempt to access the system programming menus from the wrong station will result in the prompt ‘Programming refused’.

When your keystation is not in use, its display shows the time and date on the top line. To set the time and date, see page 66.

When you dial an external number, the display shows the digits as they are dialed. The call duration is also displayed.

When you make an internal call, the station number you dial is displayed. If the station has been programmed with a name, the name is displayed. The call duration is also displayed.

You can display caller numbers (or names) on your keystation display.

The duration of external calls is displayed on the top line of the display.

Menus

When the keystation is idle, the Idle Menu is presented containing a large number of options displayed in groups of three. This menu, showing the first three options, is shown below.
(Use Scroll Keys below display to scroll up and down).

If you are on a call or operating a feature, the menu changes to offer only those options relevant to what you are doing. Also, when features such as Station Lock are set, the first prompt on the display becomes the option to cancel the activated feature.

When activating certain features it is necessary to select the stations on which you wish to activate the feature. In this case the 'Internal Call' feature lists all the stations connected to the system.

Using the display Keys to select menu options

The six display Keys, located on each side of the display, are pressed to select the menu option shown alongside on the display. This will either activate a feature, cause another menu to be displayed, or select items from a list.

When selecting from a displayed list, (e.g. Stations from the Internal Call menu), selected items will be denoted by a ♦ next to the item. Unselected items will be denoted by a ◊ next to it. Selecting an item with a ◊ alongside causes the item to be selected and the symbol to change to ♦, and vice versa.

Using the Scroll Keys

The Scroll Keys are located under the display and are used to scroll up and down through the display options as well as back and forward when text is being entered. When the Scroll Down Key (↘) is pressed while scrolling through the display options the next three available choices are shown. Conversely, pressing the Scroll Up Key (↖) will take you back up the display to the previous choice.

Using the Clear Key "C"

If you press the Clear key "C" for 2 seconds when on a call it will hang up on the call down.

When you are scrolling through menus pressing the C key steps back to the previous level menu.

If you are entering digits before lifting the handset, or entering text, pressing the C key deletes the last digit on the display.

Using the Keypad

The Keypad can be used to enter digits when dialing or text when programming names or messages.

How to enter text when programming names or messages

Press 2 once for A, twice for B, and so on. (Pressing 2 continuously loops through ABCabc2). Press 3 once for D, twice for E, three times for F, and so on.

Selecting a different key moves the cursor on automatically to the next location. If the next letter is on the same key you can either wait for two seconds for the cursor to move on or press the right Scroll Key to move to the next location. Pressing 1 or 0 and waiting two seconds gives a blank space.

Pressing the Clear Key C deletes the last letter on the display.

You can use the scroll Keys to move back and forward through the text

A maximum of ten characters per name, including spaces, can be entered.

Using the Programmable Keys / Line Keys

There are eight Programmable Keys on the keystation. The first two keys are programmed as Line 1, Line 2,. The Line Keys incorporate a light, which is lit on all keystations when the associated line is selected.

The light is green on the keystation using the line and red on all other keystations. When a call on a line is put on hold the associated Line Key light flashes on all keystations.

Should you wish to allocate alternative functions to these keys this can be facilitated using Key Programming. (See page 38).

Using the Hands-free Key

You can use the Hands-free Key to have a conversation without having to lift the handset. Press the Hands-free Key to go off-hook, as if the handset were lifted with the keystation speaker and microphone replacing the handset. Pressing the key again goes back on-hook, as if the handset were replaced.
You may also use the keystation with a headset See Using your keystation with a headset on page 53

The Hands-free key has a red light, which is lit whenever the Hands-free Key has been pressed to go off-hook or to turn on the speaker.

Note

Pressing the Hands-free Key at any time during programming exits the programming menus and returns the display to the Idle Menu.

Using the Volume Key

To adjust the speaker volume, press the Volume Key when in Hands-free Mode.

To adjust the handset receiver volume, press the Volume Key when in Handset Mode.

To adjust the ringing volume, press the Volume Key when the keystation is ringing.

Note

The Volume level increases/decreases by one step for every press of the Volume Key.

Using the Mute Key

The Mute Key can be pressed when you are using the handset or in Hands-free Mode. When pressed, the other person on the call cannot hear you. The Mute Key has a red light, which is lit when Mute is active.

The Ringing / Message Waiting Light:

There is a red light on the top right-hand corner of the keystation. This light flashes when there is an incoming call. It also lights up when a voice message has been left in your Voice Mailbox.

Using the Function Keys

There are four Function Keys located directly above the keystation display. Particular features are grouped under these keys, as follows:

HOLD: This key puts external calls on hold

PROGRAM: This key accesses the options available to customize your keystation settings. It also accesses system programming from the Programming Station only.

MESSAGE: This key accesses Voicemail. (See page 67 for Voicemail).

DIRECTORY : This key allows you to program and dial numbers in the System and Personal Speed Dial lists.

Customizing your keystation

This PROGRAM Key accesses the options available to customize your keystation settings.

To turn on Automatic answer mode

You may program your keystation to work in 'Auto-answer mode'. In this mode the Hands-free Key light flashes red, and when you receive an internal call you hear a burst of tone and the call is connected automatically. You can speak to the caller without touching the keystation.

From your keystation, press the PROGRAM Key

1. Select 'Auto answer'.
2. Select the required option – '*Set auto answer' or 'Cancel auto answer'*, to set and cancel the Automatic answer mode respectively.
3. Press the Hands-free Key to finish programming.

To program a feature onto a programmable key on your station

You may re-program any or all of the 8 Programmable Keys located on the keystations. You can program these keys to select lines, stations, features or speed dial numbers.

1. From your keystation, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until '*Key Programming'* is displayed.

3. Select 'Key programming'.
4. Press the Programmable Key to be programmed. A list of options appears on the display.
5. Select the required feature to be programmed onto the key. Use the Scroll Down Key (↘) to scroll down to view the list of available features. For example, to program the key with a speed dial number, select the '*Individual digits'* option
6. Press the Hands-free Key to finish programming.

Note

If you are programming the key to call an external number remember to precede the number with a 0 to select the CO line

To turn on Headset Mode

You turn Headset mode on and off via the PROGRAM Key

1. From your keystation, press the PROGRAM Key
2. Select 'Headset mode'.
3. Select the required option – 'Turn headset on' or 'Turn headset off'. Once selected, the display will show 'Headset On' or 'Headset Off' and then revert to the Idle Menu.
4. Press the Hands-free Key to finish programming. The options to Turn headset On? And turn Headset Off? are shown on the Idle display.

The handset does not operate in Headset Mode.

To set a ringing tone on your keystation

You can select one of six ringing tones.

1. From your keystation, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'Ringing Options' is displayed.
3. Select 'Ringing options'.
4. Select 'Tone 1', 'Tone 2', 'Tone 3', 'Tone 4', 'Tone 5' or 'Tone 6' which will cause the selected tone to sound.
5. Select 'Confirm' to use the chosen tone. On the display 'Ring type set' will appear and then the display will revert to the Idle Menu.
6. Press the Hands-free Key to finish programming.

To set the display contrast on your keystation

You may choose from four levels of display contrast.

1. From your keystation, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'Contrast Options' is displayed.
3. Select 'Contrast options'.
4. Select 'Level 1', 'Level 2', 'Level 3' or 'Level 4' to set a contrast option. The prompt 'Contrast set' appears on the display.
5. Press the Hands-free Key to finish programming.

To enter system programming

If your station is the Programming Station you have access to the system programming options. If you select this option you will be prompted to enter the System Programming Password. If this option is selected from any other station the display will show 'Programming Refused'. Again, the default Programming station is station 20.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password to access system programming (1111 in default).

Background music

This feature allows an station to have music played over the speaker of a keystation while the station is idle. This background music is supplied only if there is an external music source connected to the system. This background music is disconnected as soon as the user goes off hook or a call is presented to the station.

1. From your keystation, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'Background Music' is displayed.
3. Select the required option – 'Background music on' or 'Background music off'.
4. Press the Hands-free Key to finish programming.

Using the DECT Handset

The DECT Handset is designed for use with the Commander Pulse. The keys are as shown. For a detailed description of the functionality see Appendix A on page 181.

Making a call

Press
Dial the number you want to call. The number appears on the display and is dialed.

Note

Call timer: *The call timer shows the duration of your current call on display.*

Note

Out of range warning: *If you move too far away from the base Commander Pulse during a call, your phone will sound an alert tone, and* *will flash. You need to move closer to the base Commander Pulse or your call will be disconnected.*

Note

Low battery warning: *If your phone is almost out of battery during a call, it will sound and alert tone. Place your phone on the base Commander Pulse for charging as soon as possible or it would turn off when it is out of battery. Placing the phone on the base Commander Pulse for charging will end the current call.*

Preparatory Dialing (Pre-Dial)

With pre-dial, you can see and edit the number you are calling on the display before dialing it.

Enter the number you want to call. The number appears on the display.

Deleting digits: Press CLEAR to delete an incorrect digit. If you press CLEAR on the last digit, your phone will return to standby.

To Dial the number Press

Saving a number from pre-dial

1. Enter the number in standby. The number appears on the display
2. Press SAVE.

Note

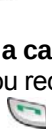
Memory Full: *If the phonebook is full, FULL is displayed, and then the phone returns to standby.*

3. Enter the name for the record. You must enter a name.
4. Press
5. Edit the number for the record if necessary. You must enter a number.
6. Press SAVE to confirm. The phone returns to standby.

End a call

Press or place the phone on the base unit or charger.

Answer a call

When you receive a call, the phone will ring and will flash in the display.
1. Press  to answer the call.

Redial a number

Your phone records the last 10 numbers you have dialed. The most recent call is stored at the top of the list. Only the first 20 digits of each number are stored.

To redial the last number dialed: -

1. Press
2. Press REDIAL. The last dialed number appears on the display and is dialed.
3. To redial one of the last 10 dialed numbers:
4. Press during standby. The redial list appears on the display.
5. Press to select the number you wish to redial. Press.

Handsfree calls

Handsfree provides the convenience of talking to the caller without holding onto the phone. You can communicate by using the speaker/microphone of the phone. Handsfree also allows others in the room to be involved in the conversation.

1. Select SPEAKER.
2. You can hear the caller over the loudspeaker and you can speak via the microphone.
3. Repeat step 1 to switch off the speaker.

Turning off the ringer

Press *SILENT* when the phone is ringing to turn off the ringer for the call.

You can also press and hold the * key when the phone is in standby to turn off the ringer for all the calls. (Press and hold again to turn on the ringer.)

Adjusting the volume on a call

You can increase or decrease the volume during a call. There are 3 volume levels for selection.

To adjust the volume, during a call:

Press . The display shows the current volume level. Press to adjust the volume.

Using Mute on a call

During a call, if you wish to speak to someone privately without having the caller hear your conversation,

Press *MUTE.* The caller cannot hear you, but you can hear the caller.

Press *UNMUTE* to communicate with your caller again.

For more detailed instructions on the DECT phone see page 181.

Message Waiting Indication

A message indication symbol appears on your DECT handset and a broken dial tone is heard when going off hook, when a message has been left in the Answering Machine or the station's voicemail.

To access the message press and dial *.

To access the answering machine dial 9 as the station number.

The default password is 1111 for all mailboxes.

Note

It is recommended that all mail boxes passwords are changed from the default password for security. This will prevent unauthorised users accessing your voicemail..

Making and Answering Calls

Making an external call.

There are two basic modes of operation available for making external calls. In the normal mode, which is the default, a line access digit (0) is dialed to select a Line.

If Automatic Line selection (ALS) is programmed you do not enter '0' the line access code.

Making an external call in normal mode

- Press a Line Key to select a free line and when dial tone is returned dial the external number.
- Dial 0, (to select an external line). When dial tone is returned dial the external number.

Making an external call with Automatic Line selection programmed

- Press a Line Key to select a free line and when dial tone is returned dial the external number.
- Lift the handset, or use a Hands-free Key, and dial the number. The system automatically selects a free line and the number is dialed.

Making an external call in Pre-dial mode

If you do not lift the handset you may enter digits in Pre-dial mode by dialing 0, followed by the external number in normal mode or dial the external number when Automatic Line selection is programmed. Digits will not be sent to line until you lift the handset, press the Hands-free key, or select 'Dial' from the display.

You can edit the number you have entered prior to sending to the line, by using the left-hand Keypad 'Edit Key', located below the keypad.

To make an internal call in normal mode

You can place an internal call in one of the following ways:

1. Select the 'Internal Call' option on the display and select the desired station from the list
2. Dial the station number (20 – 23 or 31-34) and select 'Dial'..

Lift the handset and dial the station number.

The display will show the station number, or, if programmed, the station's name.

To make an internal call with Automatic Line selection programmed

1. Select the 'Internal Call' option on the display and select the desired station from the list.
2. The display will show the station number, or, if programmed, the station's name

Speed Dial list

Each station can program up to 30 Individual Speed Dial numbers. You can also program 99 System speed dial numbers and names. Users of the system can access the system speed dial numbers, provided they are not restricted from dialing the number because of their Class of Service.

An option is available where stations can dial numbers in the system speed dial list even though they are normally restricted from dialing them. See System Speed dial override programming on page 105 and page 166.

Note

If a number or an incoming call matches a number in the system speed dial list, the name in the list will be displayed.

To add or delete a Personal Speed Dial number

1. Press the Directory Key

2. Select '*Personal Entries*.
3. Enter the Index 01-30
4. Enter the number and press *Confirm*
5. Enter the name and press *Confirm.*

To delete an entry select delete when the index is entered.

For configuration via the web interface, see page 106.

To dial a Personal Speed Dial number

1. Press the DIRECTORY Key.

2. Select 'Personal Speed dial'.
3. Enter the first letter of the name or scroll through the entries to find the entry you want.
4. When you have selected the number or name you want a free line is automatically selected and the number is then dialed.

If some numbers are entered without names they are presented at the end of the list.

To add or delete a System Speed Dial number

1. Press the DIRECTORY Key.

2. Select '*System Entries*.'
3. Enter the Index 01-99
4. Enter the number
5. Press *Confirm*
6. Enter the name
7. Press *Confirm.*

To delete an entry select delete when the index is entered.

For configuration via the web interface, see page 101.

To dial a System Speed Dial number

1. Press the DIRECTORY Key.

2. Select 'System speed dial'.
3. Enter the first letter of the name or scroll through the entries to find the entry you want.
4. When you have selected the number or name you want a free line is automatically selected and the number is then dialed.

If some numbers are entered without names they are presented at the end of the list.

To answer a call

When the keystation rings, you can do one of the following:

1. Select '*Answer the call'* on the display.
2. Lift the handset.
3. Press the Hands-free Key.

From a standard telephone, lift the handset.

Reseize

The Reseize option is displayed when dialing an external call and when an external call is answered. If Reseize is selected the current call is released and the line is re-seized presenting external dial tone.

Call Recording

If a station is equipped wit a voice mailbox they can be provided with the ability to record a call. The station is programmed to allow call recording. When allowed to record a call the option Record the call is provided on the keystation menu. Recorded calls are saved as new messages in the station's voice mailbox. See page 105 for programming via the web interface and page 169 for the keystation interface.

Holding & Transfer Calls

To place an external call on hold

1. While on the call press "*System hold'* on the display.
2. To retrieve the call, select '*Return to line'* on the display or press its Line Key.

Note

If an station has two calls on system hold, selecting 'Return to line' will return the station to the first call that was put on hold.

To transfer a call to another station

1. While on the call, select '*Internal Transfer'* on the display.
2. Select the desired station from the station list presented on the display, or dial the station number.
3. Select '*Transfer'* or replace the handset, to transfer the call.

Note

You can transfer a call to an station when the station has answered, while ringing the station, or while the busy tone is being received from the station.

To transfer a call to an external number

1. While on the call, press the Scroll Down Key (↘) until 'External transfer' is displayed.
2. Select 'External transfer'.
3. Select a free line and dial the number.
4. When the call is answered, press 'Transfer'.

Note

Transferring an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

To make an external consultation call

While on an external call you can contact another external number to make an enquiry, as follows:

1. Press the Scroll Down Key (↘) until '*External Consultation'* is displayed.
2. Select the '*External Consultation'* option on the display.
3. Select a free line and dial the number.
4. When the call is answered, you can go back and forth between both calls. Select the '*Return and hold'* option on the display each time you want to swap to the other call.

Deflecting calls

This allows you to deflect a call that is ringing at your keystation.

To deflect a call ringing at your station

1. When a call is ringing at your keystation, select '*Deflecting the call'* on the display.
2. Select a free station from the station list presented on the display. The call is presented to the selected station and stops ringing at your keystation. If you attempt to deflect a call to an unavailable station it will continue ringing.

To Divert a call ringing at your station to voicemail

1. When a call is ringing at your keystation select "*Divert to Voicemail*" on the display.
2. Incoming calls are deflected to the Answering Machine and internal calls are deflected to the station's voice mailbox. If the voicemail is busy the call continues to ring at your keystation.

Note

For information on setting up and using a Voice Mailbox refer to page 67.

Diverting Calls

To Divert all calls from your station

Before you leave your station, you can divert all your calls to ring at another station. Alternatively, you can divert all external calls presented to your station to an external number.

1. From the Idle Menu, press the Scroll Down Key (↘) until *'Station Divert'* is displayed.
2. Select 'Divert All Calls'.
3. Enter an internal number if you want to Divert all your calls to another station.
4. Enter 0 followed by an external number if you want to Divert external calls to an external number.

5. Forward will be ignored for internal calls. For internal calls the phone will ring (only If External forwarding is set to the *'External calls only'* option).
6. If your station is allocated a voice box select *'Divert to Voice Mail'*
7. Select '*Confirm'* (Only appears if destination is an external number).

WARNING

It is possible that an station may misuse the External Divert facility.
The default setting is that no station is allowed to set the facility.

Once set the Idle Menu will show the option 'Cancel Divert". To cancel the forwarding, select 'Cancel Divert'.

Note

Broken tone will be heard at your station until all call forwarding is cancelled.

You cannot Divert to an station that has the 'Do Not Disturb' feature set.

Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

To Divert your calls to you while you are at another station

The *'Follow Me'* feature allows you to set a call Divert to another station after you have left your station.

1. From the keystation answering the calls, press the Scroll Down Key (↘) until *' Station Divert'* is displayed.
2. Select '*Follow me'*.
3. You will be prompted to enter your station number and your Station Lock Password. (Default Password is 123). Once these details are entered the divert is activated.

Note

Once set the Idle Menu on your own station will show the option 'Cancel Divert'. To cancel the 'Follow Me' forwarding, select 'Cancel Divert'.

Note

'Follow Me' will not forward a call from an station, if the call has been previously forwarded by 'Follow Me' to that station.

To Divert calls when your station is busy

The '*Divert When Busy'* feature allows you to forward all your calls to ring at another station if your station is busy (engaged). Alternatively, you can forward all external calls to an external number if your station is busy. In this case, internal calls will not be forwarded but will be given the busy tone.

1. From the Idle Menu, press the Scroll Down Key (↘) until *'Station Divert'* is displayed.
2. Select 'Divert when busy'.

    a) Enter an internal number if you want to forward all your calls to another station.

    b) Enter 0 followed by an external number if you want to Divert calls to an external number. A programming option is available to allow both internal and external calls (or external calls only) to be diverted externally.

3. Select '*Confirm'* to accept the number.

To set a *'Divert when Busy'* from a standard phone the code is '733' followed by the destination number.

WARNING

It is possible that an station may misuse the External Divert facility. The default setting is that no station is allowed to set the facility.

Note

When 'Forward when busy' is enabled on an station to Forward to an external number, external incoming calls will divert but internal calls will not.
Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

To cancel a forward when busy

1. *From the Idle Menu, select 'Station Divert'.*
2. Select 'Divert when busy'. The forwarding is automatically cancelled and the display returns to the Idle Menu.

To forward calls when your station does not answer

The 'Divert On No Answer' allows you to forward all your calls to ring at another station if there is no answer at your station after four rings. Alternatively, you can forward all external calls to an external number if your station has not answered after four rings. In this case, internal calls will not be forwarded but will continue to ring your station.

1. From the Idle Menu, press the Scroll Down Key (↘) until "*Station Divert"* is displayed.
2. Select '"Divert on no answer"
3. Enter an internal number if you want to forward all your calls to another station.
4. Enter 0 followed by an external number if you want to Divert external calls to an external number.
5. Press '*Confirm'* to accept the number.

WARNING

It is possible that an station may misuse the external forwarding facility. The default setting is that no station is allowed to set the facility.

Note

If 'Divert On No Answer' is enabled on an station to forward to an external number, external incoming calls will divert, but internal calls will not. Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls..

To cancel a Diverting on No Answer forwarding

1. From the Idle Menu, press the Scroll Down Key (↘) until *'Station Divert'* is displayed
2. Select '*Divert on no answer*'. The diverting is automatically cancelled and the display returns to the Idle Menu.

Line Divert

This feature allows any station to set a divert for an exchange line.

Setting line forwarding from a system phone

1. From the Idle Menu, press the Scroll Down Key (↘) until 'Line Divert is displayed
2. Select the line. (The station may be programmed for more than one line)
3. Select the Option required
4. Enter the destination number.
5. Select 'Answering Machine' to forward the calls to the answering machine.

WARNING

It is possible that an station may misuse the external divert facility.

Cancel Line diverting from system phone

If 'All Call Forward' is set for a 'Line divert the keystations ringing for calls on the line have the prompt 'Cancel Line divert' on their displays.

1. Press the "Cancel Line Divert" option
2. The display will show the lines. Select the required line
3. Select the divert to be cancelled.

Conference Calls

This feature allows you to hold a three-way conversation between three stations, or between two stations and a line, or between two exchange lines and an station.

To hold an Internal Conference

1. When on a call, press the Scroll Down Key (↘) until '*Internal Conference'* is displayed.
2. Select 'Internal Conference'.
3. Select the station to be included in the conference.
4. When the station answers, select '*Conference'* on the display.

To hold an External Conference

1. When on a call, press the Scroll Down Key (↘) until *'External Conference'* is displayed.
2. Select 'External Conference'.
3. Select a free line
4. Dial the external number.
5. When the call is answered, select '*Conference'* on the display.

Note

An external conference call ties up two exchange lines.

At the start of a conference call a single tone is presented to all parties to indicate that the call is a conference call.

Using your keystation with a headset

Your keystation is equipped with a socket for a Headset.

Plug a headset into the socket.

1. From your keystation, press the PROGRAM Key
2. Select '*Headset Mode'* and select *'Turn Headset On'*. The phone is now programmed to operate with a headset.
3. *'Turn Headset Off?'* is now displayed to allow you to revert to handset mode.
4. If *'Turn Headset Off?'* Is selected the menu updates to show *'Turn Headset On?'* You can turn the headset on and off as required.

To return the phone to normal operation,

1. From your keystation, press the PROGRAM Key and
2. Select '*Headset mode'*.
3. Select *'Turn Headset Off'*

To make an internal or external call when using a headset

Press the Hands-free Key and dial your calls in the normal way.

To clear down (end) a call when using headset

Press the Hands-free Key.

To answer a call when using a headset

Select the '*Answer the call'* option on the display, or press the Hands-free Key.

Feature Access Code List

You may access the range of Commander Pulse features with a standard or DECT Handset. To use a feature, dial the appropriate code from the list below.
If your telephone is equipped with memory keys you may program feature codes onto the keys - refer to your telephone user guide for instructions. On the cordless phone you can program codes under the Services (SER) key. See Page 187.

Feature	Code	Feature	Code
Answering machine on/off	737	Line Divert All Calls	792
Reminder Call	718	Line Divert when busy	793
Reminder Call cancel	718*	Line Divert on No Answer	794
		Internal Call Waiting	R 8
Call Pick-up	727	Night Service	738
Call Recording	R 795	Open the Door	731
Call Waiting Tone Protection	725 (R 725)	Page – Keystations	716
Conference	R 3	Park	R 712
Divert All	732 xx	Pick up parked call	712
Divert when busy	733 xx	Redial	77
Divert on No Answer	734 xx		
Do Not Disturb – set/cancel (Not available to station 20)	736	Reset station	739
Door Open	731 (R 731)	Return to call placed on hold	719
Stations - Wired	20-23	Return and hold in Two Call handling	R 2
Stations - Cordless	31-34	Return and release in Two Call handling	R 1
Station 20	9	Ring Back	R 5
Station Lock – change code	714 xxx	Saved Number Redial	781-785
Station Lock - lock/unlock	713 xxx	Speed Dial – accessing personal numbers	74(01 -30)
External Call Hold	R	Speed Dial – accessing system numbers	400-499
Follow Me	735 (Password) xx	Speed Dial – programming personal numbers	75(01 -30)
Forward Recall	R 722	Voice call (to page an individual Keystation)	715
Line Access	0	Voice Mail Access	*
		Voice Mailbox number	710

Making External Calls

There are two modes of operation available for making external calls. The normal mode, which is the default, a line access digit is dialed to select a external line. If Automatic Line selection is programmed you do not enter the line access code.

To make an external call in normal mode

1. Lift the handset, or use a Hands-free Key, if available on your telephone.
2. Obtain a free line in one of the following ways:
3. Dial 0 to get an outside line
4. Dial the number you require.

To make an external call when Automatic Line mode is enabled

1. Lift the handset, or use a Hands-free Key, if available on your telephone.
2. Dial the number.
3. The system automatically selects a free line and the number is dialed.

To make an internal call in normal mode

1. Lift the handset, or use a Hands-free Key, if available on your telephone.
2. Dial the desired station number (20 -23 or 31-34).

To make an Internal call when Automatic Line mode is enabled

1. Lift the handset, or use a Hands-free Key, if available on your telephone.
2. Press the Recall key and dial the desired station number (20-23 or 31-34)

To answer a call

When the telephone rings, lift the handset, or use a Hands-free Key if available on your telephone.

Holding & Transfer Calls

To place a call on hold

1. Press the Recall Key.

If you replace the handset, you can continue to use your telephone. The held call will call back within ninety seconds provided your telephone is idle. If you are busy on the telephone after the ninety seconds the call will ring when the handset is replaced.

Note: to retrieve the held call dial 719 from your handset

To transfer a call

1. Press the Recall Key.
2. Dial the station number and replace the handset.

To make an external consultation call

While on an external call you can contact another station to make an enquiry, as follows:

1. While on an external call, press the Recall Key on your telephone.
2. Dial the station number.
3. To return to the external call and place the station on hold, press Recall and dial 2.
4. To return to the external call and release the station, press Recall and wait or press Recall and dial 1.

To transfer the external call to the station, replace the handset when talking to the station with the external call on hold.

Station Diverting

Divert all calls

1. Lift handset or use hands-free if available.
2. Dial 732
3. Dial the station number, or
4. Dial the external phone number (including line access code 0)
5. Followed by #.

Cancel Divert all calls

1. Lift handset or use hands-free if available.
2. Dial 732.

Divert calls when your telephone is busy

1. Lift handset or use hands-free if available
2. Dial 733
3. Dial the station number, or
4. Dial the external number, (including line access code 0)
5. Followed by #.

Cancel Divert on busy

1. Lift handset or use hands-free if available
2. Dial 733.

Divert calls when your telephone is not answered (after four rings)

1. Lift handset or use hands-free if available
2. Dial 734
3. Dial the station number, or
4. Dial the external phone number (including line access code, e.g. 0)
5. Followed by #.

Cancel Divert on no answer

1. Lift handset or use hands-free if available
2. Dial 734.

Line Divert

Divert all calls

1. Lift handset or use hands-free if available.
2. Dial 792 followed by the line number (1-4)
3. Dial the station number, or
4. Dial the external phone number (including line access code 0)
5. Followed by #.

Cancel Line Divert all calls

1. Lift handset or use hands-free if available.
2. Dial 792 followed by the line number (1-4).

Divert calls when line is busy

1. Lift handset or use hands-free if available
2. Dial 793 followed by the line number (1-4)
3. Dial the station number, or
4. Dial the external number, (including line access code 0)
5. Followed by #.

Cancel Line Divert when busy

1. Lift handset or use hands-free if available
2. Dial 793 followed by the line number (1-4).

Divert calls when line is not answered (after four rings)

1. Lift handset or use hands-free if available
2. Dial 794 followed by the line number (1-4)
3. Dial the station number, or
4. Dial the external phone number (including the line access code, e.g. 0)
5. Followed by #.

Cancel Line Divert on no answer

1. Lift handset or use hands-free if available
2. Dial 794 followed by the line number (1-4).

Programming and dialing speed dial numbers

If you have a standard telephone, you can program up to 10 Personal Speed Dial numbers.

To program a Personal Speed Dial number

1. Lift the handset, or press the Hands-free Key, if available.
2. Dial the code 75.
3. Enter the location (01 - 30) where you want to store the number.
4. Dial the number you want to store.
5. Go on-hook.

Note

The line access codes 'e.g. 0' is not required

To dial a Personal Speed Dial number

1. Lift the handset, or press the Hands-free Key, if available.
2. Dial the code 74.
3. Dial the location (01 - 30) of the number you wish to access. The number is automatically dialed.

To dial a System Speed Dial number

Dial the location code (401 – 499) of the number you wish to access. The number is automatically dialed.

Voicemail

Turn on your voicemail

When you are allocated a voice mailbox 'Forward on no answer' is automatically set to your Voice box

The Voice code is 710

To Divert all your calls to your voicemail Dial 732 followed by 710

To Divert on busy to your voicemail Dial 733 followed by 710

Additional Call Features

Redial

Use the Redial feature to redial the external number you most recently dialed. A line is selected automatically.

To redial the last external number dialed

- From the Idle Menu, select 'Redial last number'.
- From a standard telephone, the code is 77.

Saved Number Redial

In addition to the Last external number the previous 5 numbers dialed are also stored and may be redialed.

- From the Idle Menu, select 'Saved Numbers'.
- Select the number to be dialed.

From a standard telephone the codes are 781 – 785 for saved numbers 2 - 6. The first saved number is the Last Number Redial code 77.

Call Pick-up

This feature allows the user to pick up any call, ringing at another station.

These calls include:

- Internal calls
- External calls
- CLI Routed calls
- Incoming ringing calls routed to a single station

To pick up a call ringing at another station

- From the Idle Menu, select the 'Call Pick-Up' option on the display.
- From a standard telephone, the code is 727.

Ring Back

If the station you call is busy, use the Ring Back feature to have the station call you back when it becomes free. If you dial for a CO line and no lines are free, use the Ring Back feature to receive a CO line as soon as one is available.

To have a busy station call you back when it becomes free

- When you have called a busy station, select 'Ring Back' on the display.
- When the station becomes free, your station will ring and your display will show 'Ring Back from Station'.

Select 'Answer the Call' or pick up the handset to ring the station.

From a standard telephone, dial Recall 5 when you have called a busy station.

To receive an exchange line as soon as one is available

- When you have dialed for a line and none are free, select 'Ring back' on the display.

Select '*Answer the Call'* or pick up the handset to select a line.

From a standard telephone dial Recall 5 when you have dialed for a line and no lines is free.

Camp on Busy

'Camp on Busy' allows you to have your station call a busy station as soon as it becomes free.

When you call a station and get a busy (engaged) tone, stay off-hook and when the called station becomes free it will start ringing.

Call Waiting from another station

If you get a busy tone, when you call a station, you can alert the busy station that you wish to contact provided the station is not protected against receiving Call Waiting tones. (See 'Call Waiting Tone Protection' on page 159). An audible tone will sound on the called station, and the message 'Call wait. – Stn xx' will appear on its display. Options to accept the call are offered on the display.

To present a busy station with a Call Waiting tone

Select 'Waiting tone' on the display when a busy tone is returned from a station.
From a standard telephone, the code is Recall 8.

To accept a waiting call

If another station presents you with Call Waiting, this will be indicated on your display and you will hear the Call Waiting tone, provided your station is not protected against Call Waiting tones.

Select one of the options presented on the display.

Note

If you ignore the Call Waiting tone for a short period the Call Waiting offer is rejected and the calling telephone is presented with the message 'Call Waiting Rejected'.

Call Waiting from external calls

If you are on a call and your station is presented with an external call you will hear a call waiting tone provided your station is not protected against call waiting tones.

The line the call is on will be indicated on your display. If you select the second call, by pressing the line key associated with it, the first call will be automatically released.

Call Park

The Call Park feature allows you to put an external call on special hold by 'parking' it in the system. Any station may then pick up the call.

To park and retrieve a call

On a keystation, select '*Call Park'* on the display.

'*Pick up park'* is then displayed on the top line on the display on all keystations. Select this option to retrieve the parked call.

Note

Only one call may be parked in the system. A parked call will recall after three minutes

On a standard telephone, the code is Recall 712 to park a call and 712 to retrieve it.

Storing and redialing caller numbers

The Caller Number Display (CND) service is available on your PSTN lines. If you subscribe to this service, your network sends the telephone number of callers to the Commander Pulse (provided the caller has not elected to restrict the network from presenting their number). The telephone number (or associated name) is displayed on the ringing keystations.

The CND information is also shown if the station is equipped with a standard telephone which supports the service.

Your telephone number will also be presented to persons you call, unless you restrict your number from being presented.

The CND store automatically stores information relating to unanswered calls to the system (answered calls can also be stored). The information stored is the caller telephone number, and the date and time of the call. Information is not stored for calls with withheld or unavailable numbers.

When a new record is received and the memory is full the oldest record is discarded from memory.

The CND list can be allocated as one central store of data on calls received. This store alerts station 20 (default), by means of a display prompt, that new calls have been stored. You can also program all keystations to store up to ten numbers each.

To examine and redial stored caller numbers

Select 'Call Log - Personal' to examine the numbers in the personal store of your keystation.

Select 'Call Log - System' to examine the system store. This can be selected from any station.

You will see the following information:

1. The number and time of the last three calls received are displayed.
2. If the call was answered the display will show an 'A' on the right-hand side of the record. If the call was not answered, the 'A' will not be displayed.
3. The date information for the displayed calls is shown for a few seconds instead of the time.

You may scroll through the stored numbers and names by using the Scroll Up (↖) and Scroll Down Key (↘) situated below the display.

If you press the display key beside a particular record the system automatically selects a free line and dials the displayed number. If the station is restricted from dialing, or if there is no line available, you will hear a busy tone.

If an 'R' is displayed on the right-hand side of a record, this indicates that the number has been redialed.

If an 'A' is displayed on the right-hand side of a record, this indicates that the number has been answered.

To set up your system to display caller numbers received on the lines (CND service)

For configuration via the web interface, see page 109.

For configuration via the keystation interface, see page 156.

To associate a caller number with a name, and route its calls to an station

For configuration via the web interface, see page 115.

For configuration via the keystation interface, see page 156.

CND List – storing calls

To program the CND lists to store all calls or unanswered calls only see page 100 for configuration via the web interface, and page 157 for configuration via the keystation interface.

To set up stations with an individual CND List

For configuration via the web interface, see page 103.

For configuration via the keystation interface, see page 157.

Paging

To make an announcement over the speakers of all keystations

The *'Page All Keystations'* allows any station to make an announcement over the speakers of all keystations. Only keystations that are page-protected will not be paged.

- From the Idle Menu, press the Scroll Down Key (⇲) until '*Page all Keystations*' is displayed.
- Select 'Page all Keystations'.

Make your announcement.
From a standard telephone, the code is 795.

To make a call over the speaker of another keystation

The Voice Call feature allows you to speak over the speaker of an individual keystation. If the keystation is page-protected the voice call will fail.

- From the Idle Menu, press the Scroll Down Key (⇲) until '*Voice call'* is displayed.
- Select 'Voice call'.

Select the station you wish to page.

Make your announcement.

From a standard telephone, the code is 715.

To answer a Voice Call at your station

Press the Secrecy Key and speak in Hands-free Mode, or pick up the handset.

To protect keystations against Announcements and Voice Calls

For configuration via the web interface, see page 103.

For configuration via the keystation interface, see page 158.

Least Cost Routing

You may use this feature to have users' calls routed over specific lines, or over a specific Network Provider. To set the feature up you associate input codes with the lines over which calls should be routed and with whatever network codes are necessary to route the call.

In addition you can choose to route the calls over different lines at various times of the day for optimum call rates. Once the facility is activated calls are automatically routed over the selected lines, and the network code is sent to the line before the telephone number.

To set up codes to allow calls to be routed on specific lines or networks

For configuration via the web interface, see page 113.

For configuration via the keystation interface, see page 158.

Least cost Routing activated automatically at set times

For configuration via the web interface, see page 113.

For configuration via the keystation interface, see page 159.

Sending a Forward Recall while on call

A Forward Recall signal may be required if you are using certain network services on your PSTN lines, or if your Commander Pulse is connected to another telephone system (PABX) via one of the line interfaces.

The Forward Recall feature allows you to send a hold signal forward on the line to the exchange or PABX. To send a hold signal, you must be on a call or have dialed at least one digit of the number you are calling.

To send a Forward Recall signal to an exchange or a PABX

From a keystation, select '*Forward recall'* on the display.

From a standard telephone, the code is Recall 722.

Do Not Disturb

If your station is set to 'Do Not Disturb', anyone trying to call you will receive a busy (engaged) tone. If the person trying to contact you has a keystation, 'Do Not Disturb Enabled' will appear on its display. 'Call Back' and 'Alarm call' are the only incoming ringing that will be accepted when this feature is set.

To set Do Not Disturb on your station

1. From the Idle Menu, press the Scroll Down Key (↘) until '*Do Not Disturb'* is displayed.
2. Select 'Do Not Disturb'.

'Do Not Disturb' is unavailable on station 20.

To cancel Do Not Disturb on your station

From the Idle Menu, Select 'Cancel Do-Not-Disturb'. This option is displayed only when the feature is set.

When '*Do Not Disturb'* is set, you will hear a broken dial tone when you lift the handset.

From a standard telephone, the code 736 is used to set and cancel this feature.

Station Lock

This feature allows you to lock your station to prevent unauthorized users from making external calls. You use a Lock Password to lock, unlock, or to make calls from a locked station. The default Lock Password for all stations is 123, but each station may change its password. Station Lock Passwords can be examined from the Programming Station.

To lock your station

1. From the Idle Menu, Press the Scroll Down Key (↘) until 'Station Lock' is displayed.
2. Select 'Station Lock'.
3. Select 'Lock the Station'.
4. Dial your 3-digit Lock Password. (The default Lock Password is 123).

Press the Hands-free Key to finish programming.

From a standard telephone, the code is 713.

To unlock your station

1. Select '*Unlock the station'.* This display option only appears when the station is locked.
2. Dial your 3-digit Lock Password. (The default Lock Password is 123).

Press the Hands-free Key to finish programming.

From a standard telephone, the code is 713.

To make a call from a locked station

1. Press a Line Key, or dial the code for a line (0), as if to select a line.
2. Dial your 3-digit Lock Password. (The default Lock Password is 123).
3. Lift the handset and press either '*Send digits'* or the Hands-free Key.
4. A line will be selected.
5. Dial the number you require.

To change your station Lock Password

1. From the Idle Menu, press the Scroll Down Key (↘) until 'Station Lock' is displayed.
2. Select 'Station Lock'.
3. Select 'Change the lock code'.
4. Dial the existing 3-digit Lock Password. The default password is 123.
5. Dial your new 3-digit Lock Password. The new Lock Password will not be displayed when entered.

Press the Hands-free Key to finish programming.

From a standard telephone, the code is 714.

To examine Station Lock Passwords

For configuration via the web interface, see page 105.

For configuration via the keystation interface, see page 159.

Reminder call

This feature enables you to set your station to ring at a given time.

To set your station to give you a Reminder call at a given time

1. From the Idle Menu, press the Scroll Down Key (↘) until '*Reminder call'* is displayed.
2. Select 'Reminder call'.
3. Enter the time in the 24-hour clock format, for example, 0930 for 9.30 am.

At the programmed time the station will give ten rings. If not answered, it will ring twice more at two-minute intervals and will then cancel.

Reminder calls must be set daily and therefore cannot be set more than 24hrs ahead.

To review and cancel a Reminder call

To review an Alarm call, select *"Reminder call'* and the time set will be displayed.
Select 'Confirm' to retain the programmed time.
If you wish to change the time, select 'Change' and enter a new time.
To cancel the alarm call, select *'Change'* followed by '*Confirm'.*

From a standard telephone, the code 718 is used to set an Reminder call, and the code 718* is used to cancel it. A standard telephone cannot query the Reminder call time.

Station Reset

You can reset your station to cancel all the following features if they have been set:

- Do Not Disturb
- Call Forward
- Call Back
- Alarm call

To reset your keystation

1. From the Idle Menu, press the Scroll Down Key (↘) to scroll downwards until *'Reset the telephone'* is displayed.
2. Select *'Reset the telephone'.* The display shows 'Station reset' momentarily before returning to the Idle Menu.

If you are using a standard telephone, dial 739 and wait for the acknowledgement tone (internal dial tone).

Incoming Call Handling

General

Incoming Calls can be programmed to ring any number of stations. For configuration via the web interface, see page 98.
For configuration via the keystation interface, see page 160.

When calls are received on a line all free programmed stations are rung.

If the call is not answered it is forwarded to the Answering Machine after the forward on no answer timer expires.

Note

The divert on no answer timer is set at 18 seconds in default. This timer can be changed. See Page 112 to change it via the Management interface and Page 179 to change it via the programming keystation

All Line Divert Options set for the line are acted on.

Note

Any divert set on an station are ignored for incoming calls unless the calls are routed to the station by CND programming or a caller has dialed through the Answering Machine or a voice mail box

Restricting Outgoing Calls

This feature lets you decide which lines each station can access for outgoing calls. By default, all stations have access to all lines.

For configuration via the web interface, see page 116.

For configuration via the keystation interface, see page 160.

Day/Night Service

The 'Day Service' / 'Night Service' feature allows you to change the stations which ring on incoming calls, change the Class of Service at each station, and change the voice greeting heard by callers (if you have voicemail installed). These changes can take place automatically, at pre-programmed times daily, or can be invoked manually. Furthermore, the system can be programmed to remain in 'Night Service' over the weekend.

For configuration via the web interface, see page 99.

For configuration via the keystation interface, see page 161.

System Time/Date

For configuration via the web interface, see page 33.

For configuration via the keystation interface, see page 162.

Music on Hold Options

When an external call is placed on hold, you can choose between supplying music, a tone, or silence to the caller. The music source can be:

- internal, in which case it is integrated into the system and cannot be changed,
- external, in which case an external source must be connected to your system through a music on hold interface

For configuration via the web interface, see page 99.

For configuration via the keystation interface, see page 163.

Hotline

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialed can be an station or an external number.

For configuration via the web interface, see page 103.

For configuration via the keystation interface, see page 163.

Assigning Station Names

You may assign names to stations. When an station receives an internal call, its display will show the calling station name in the place of the calling station number.

For configuration via the web interface, see page 102.

For configuration via the keystation interface, see page 163.

Class of Service

Each station may be programmed for a Class of Service. This determines the type of call the station is allowed to dial. Four tables, which can be programmed with up to fifty codes, are used to implement six Classes of Service:

For configuration via the web interface, see page 110.

For configuration via the keystation interface, see page 164.

Using Voicemail

Every station can be allocated a voice mailbox. An Answering Machine facility is also available and is automatically turned on when the system is initially turned on.

Voicemail

To allocate a Voice Mailbox to an station

For configuration via the web interface, see page 102.

For configuration via the keystation interface, see page 167.

To turn on your Voice Mailbox

For configuration via the web interface, see page 102.

For configuration via the keystation interface, see page 170.

To access your Voice Mailbox

1. On the keystation, Press the MESSAGE Key.
2. Select 'Voice Mail'.
3. Enter your station number, (which is your voice mailbox number).
4. Enter your voicemail password, (1111 by default), followed by #.
5. You are presented with the voice mail menu. The options displayed are 'Play', 'Erase all messages', 'Greeting', 'Change Password', 'Monitor' and 'Cancel'.

To retrieve messages left in your Voice Mailbox

If new voice messages have been left in your Voice Mailbox, the Message Waiting Light, located on the top right-hand corner of your keystation, will be on. In addition, the top line on your keystation display will show 'New voice messages'.

1. From the keystation's display, select 'New voice messages'.
2. Enter your station number.

3. Enter your Voicemail Password, which is 1111 by default, followed by #.
4. Select '*Play'.* The new messages are played.

Note

Each message is time stamped to tell you when the message was received. When all new messages are played, you are informed of the total number of messages in your voicemail box. You may skip the time stamp by dialing 8, which jumps forward ten seconds.

Forward a message from a keystation

A user can forward a message from their voice box to another voice box.

- While you are listening to the message select the *'Forward message'* option
- Select the station to forward to from the menu on the phone

In the forwarding voice box the forwarded message is considered as a message that has been heard by the user.

To automatically call the sender of a message

The 'Return call' feature allows a user to initiate a call to the sender of a message in their voice box.

When you have listened to a message in the Voicemail select the '*Return Call*' option

The system initiates a call to that number

Note

To return calls to external callers the CND service must be available on the lines.

To record your own Voice Mailbox greeting:

Each station, which has been allocated a Voice Mailbox, can record its own greeting. This will be relayed to callers who are answered by the Voice Mailbox.

1. At your station, press the MESSAGE Key.

2. Select 'Voice Mail.
3. Enter your station number when prompted.
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. Select 'Greeting'.
6. Select 'Record greeting'
7. Speak to record a personalized greeting when prompted.
8. Press 'Confirm'.

Press the Hands-free Key to finish programming

To replay the Voice Mailbox greeting

1. At your station, press the MESSAGE Key.

2. Select 'Voice Mail'.
3. Enter your station number when prompted.
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. Select 'Greeting'.
6. Select 'Replay greeting'

The greeting will then be replayed for you.

Transferring calls to Voicemail Boxes

You can transfer calls to any Voicemail Box without calling the station. When you are on a call select 'Transfer to Voice Mail'

1. The menu is updated showing those stations equipped with voicemail boxes.
2. Select the station from the menu
3. Select *'Transfer'* or replace the handset.

For standard telephones the user should press the recall key and dial 710 followed by the station number. Replace the handset.

To retrieve your Voicemail box messages remotely

To access your voicemail box your firstly need to either:

1. Your calls must be diverted (either by Divert all, Divert on No Answer or Divert on Busy) to your Voicemail box, and have either a line programmed to ring directly at your station.
2. Have your incoming call transferred to your voice mailbox
    - If a line is programmed to ring directly at your station and your Voice Mailbox is turned on, dial the phone number for the line.
    - Call in on a line which you know will be answered and have the call transferred to your Mailbox.
    - When answered by a voicemail greeting, you can access your Voice Mailbox by dialing
    - the voicemail access code of code 711,
    - your station number,
    - your Voicemail password and #
    - Then dial the following numbers to access your messages

While listening to the Greeting

- Dial 1 Playback commences at the first message
- Dial 2 For more information.
- Dial 41 Turn remote notification on.
- Dial 42 Turn remote notification off.
- Dial 43 To program remote notification.
- Dial 91 Change the outgoing greeting
- Dial 92 Check the outgoing greeting
- Dial 93 Delete the outgoing greeting
- Dial 6 Erase all messages
- Dial 0 Change Voicemail Password

When playback of messages has commenced

- Dial # Playback is paused
- Dial 2 Save this message and move to the next message
- Dial 3 Erase this message and move to the next message
- Dial 4 Go back to the start of the message

- Dial 5 Go back to the previous message
- Dial 7 Go back ten seconds
- Dial 8 Go forward ten seconds / Skip the time stamp
- Dial 9 Forward the message to another station
- Dial 0 Return Call. Automatically make a call to the caller who left the message (this feature is not applicable when mailbox is accessed remotely).

To monitor/pick-up callers as they speak to your Voice Mailbox

You can operate your voicemail in Voicemail Monitor Mode. In this mode, when calls are forwarded to your Voice Mailbox and your station is free, the call is relayed over the speaker of your keystation. If you lift your handset you can intercept the call in which case no message is left in the Voice Mailbox.

1. Press the MESSAGE Key.

2. Enter your station number when prompted.
3. Enter your Voicemail Password, (1111 by default), followed by #.
4. Press the Scroll Down Key (↘) until '*Monitor'* is displayed.
5. Select Monitor.
6. Select either "Monitor On" or "Monitor Off"
7. Press the Hands-free Key to finish programming.

To change your Voicemail Password

By default, each station is allocated the same Voicemail Password, (1111). You can enter your own password, which can be up to eight digits long, as follows:

1. Press the MESSAGE Key.

2. Enter your station number when prompted.
3. Enter your Voicemail Password, (1111 by default), followed by #.
4. Select 'Change password'.
5. Enter your new Voicemail Password, which can be up to eight digits long.
6. Press 'Confirm'.

Press the Hands-free Key to finish programming.

Note

If you forget your Voicemail Password, you can check all station Voicemail Passwords from the Programming Station.

To check all Voicemail Passwords

- For configuration via the web interface, see page 105.
- For configuration via the keystation interface, see page 170.

Remote Notification of Voice Messages

Stations must be programmed to allow remote notification. See page 116 for programming from the Management Application and Page 167 for programming from the programming keystation.

When a user turns remote notification on, a call will be made to an external number programmed by the user to notify them that they have received a new voicemail message in their voicemail box.

The user can set up remote notification to notify them of all new messages or only those marked as priority by callers to their voice mail.

Remote notification can be turned on and off as required.

If the call is to a personal number the user can access their voice mail when they answer the call by entering their voice mail password and pressing #.

Setting Up your Remote Notification to a Personal Number

You must first program the personal number that the system is to call when a new message is received. Then select whether all messages or messages marked as priority are notified. Finally you turn remote notification on.

Programming a Personal Number

1. Press the MESSAGE key.

2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select “Remote Notification”.
5. Select “Programming”.
6. Select “Personal Number”.
7. Select “Change”.
8. Enter the number.

From a standard or DECT Handset dial 4311 followed by the number to program a personal number.

Notification of All Messages or Priority messages

1. Press the MESSAGE key.

2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select “Remote Notification”.
5. Select “Programming”.
6. Select either “Priority Messages Only” or “All Messages”.

From a standard or cordless phone dial 433 for priority messages and 434 for all messages.

Turning Remote Notification on and off

1. Press the MESSAGE key.

2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select “Remote Notification”.
5. Turn remote notification on or off as required.

From a standard or cordless phone dial 41 to turn remote notification on and dial 42 to turn it off.

To operate voicemail from a standard telephone

Standard telephones can also be allocated Voice Mailboxes. When a Voice box is allocated the 'Forward On No Answer' is automatically set for the station. You can set 'Forward All Calls' or 'Forward when busy' to the Mailbox as well by setting the Forward to 710.

- 732 for 'Forward all calls'
- 733 for 'Forward when busy'
- 734 for 'Forward on no answer'

Your telephone will be rung if any messages have been left in your own Mailbox or the Answering Machine. If your station is equipped with a phone that can detect CND information an indication will be given on the phone that you have new voice messages. If your phone does not have CND capability you should manually access your Voice Mailbox for messages.

To access the Voice Mailbox, dial the code 711, followed by your station number, Voicemail Password and #. Then dial the following numbers to access your messages:

While listening to the Greeting

- Dial 1 Playback commences at the first message
- Dial 2 For more information.
- Dial 41 Turn remote notification on.
- Dial 42 Turn remote notification off.
- Dial 43 To program remote notification.
- Dial 91 Change the outgoing greeting
- Dial 92 Check the outgoing greeting
- Dial 93 Delete the outgoing greeting
- Dial 0 Change Voicemail Password

When playback of messages has commenced

- Dial # Playback is paused
- Dial 2 Save this message and move to the next message
- Dial 3 Erase this message and move to the next message
- Dial 4 Go back to the start of the message
- Dial 5 Go back to the previous message
- Dial 7 Go back ten seconds
- Dial 8 Go forward ten seconds / Skip the time stamp
- Dial 9 Forward the message to another station
- Dial 0 Return Call. Automatically make a call to the caller who left the message.

Answering Machine

In default all calls received are Diverted on No Answer to the Answering Machine.

This additional feature allows you to set up the Answering Machine so that it can be turned on and off as required. You can also set the timer so that the answering machine answers calls immediately or after ringing for a period

You can select which lines are to be answered by the answering machine when it is turned on.

All messages received are stored in an answering machine, which is controlled by station 20. Station 20 can also customize the greeting.

You can turn the Answering Machine service on and off at any time at from any station and its operation is independent of 'Night Service'.

You can use it if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the Answering machine. The greeting may ask callers to dial a station number, in which case the call will be transferred through to that station.

To program lines to be answered by the Answering machine

- For configuration via the web interface, see page 99.
- For configuration via the keystation interface, see page 171.

To turn the Answering Machine on and off

From a keystation select Answering Machine. At least one line must be programmed to be answered by the answering machine for the prompt to appear on the idle display.
From a standard or cordless phone dial 737.

- For configuration via the web interface, see page 99.
- For configuration via the keystation interface, see page 171.

To retrieve messages left on the Answering machine

Messages stored on the Answering machine can be retrieved from any station. When messages have been left, the Message Waiting light on station 20 will be lit and the 'Ans/machine messages' will appear on the top line of the display.

1. Select 'Ans/machine messages'
2. Enter 9 as the station number.
3. Enter the Voicemail Password followed by # and select the option you require.
4. Station 20 can have its own Voice Mailbox, accessed by using station number 20. The Answering machine has its own Mailbox, accessed by using station number 0. Both can have their own Voicemail Passwords.

To change the greeting on the Answering machine

1. Press the MESSAGE Key.

2. Select “Answering machine” or dial 9 as the station number
3. Enter your Voicemail Password, (1111 by default), followed by #.
4. You are presented with the Voice Messaging Control Menu. The options displayed are ‘Play’, ‘Erase all messages’, ‘Greeting’, ‘Change Password’, ‘Monitor’ and ‘Cancel’.
5. Select ‘Greeting’.
6. Select ‘Record greeting’
7. Speak to record a personalized greeting when prompted.
8. Press ‘Confirm’ when finished the greeting.
9. Press the Hands-free Key to finish programming.

To set the time a call will ring before the Answering machine answers

- For configuration via the keystation interface, see page 171.
- For configuration via the Web Interface see Page 112

Programming Additional System Options

Using a Door station

You can equip your Commander Pulse with a Door station. The Door station has a button which, when pressed, rings at programmed stations. It has a microphone and speaker for communication. With a Door station fitted in your reception area, anyone visiting your premises can call when they arrive and you can speak to them before you let them in.
Your Commander Pulse also features a Doorstrike relay output, which can be used to operate a Doorstrike mechanism, to allow you open the door from your station. You must purchase the Doorstrike mechanism yourself and arrange for a qualified electrician to install it.

- For configuration via the web interface, see page 100.
- For configuration via the keystation interface, see page 172.

Answering a Door station call

You can answer a Door station call if your station is programmed to ring when someone calls at the Door station.

- To answer a door station call, lift the handset and speak. There is no code to dial.

A station cannot make a call to a door station

To open a door using the Doorstrike

1. When your station is ringing with a Door station call, and you have a Doorstrike mechanism installed, the option ‘Open the door’ will be displayed.
2. Select *‘Open the Door’.* The Doorstrike relay will operate and the call to the Door station will be disconnected.

From a standard telephone, the code is Forward Recall 731 if you are on a call and 731 if you are not.

External Diverting Options

This allows you to decide if external callers or external and internal callers to your station are forwarded externally. It also allows stations to be prohibited from activating an external forwarding.

- For configuration via the web interface, see page 104.

Note

The Divert on no answer timer is set at 18 seconds in default. This timer can be changed. See Page 112 for changing it via the Management interface and Page 179 to change it via the programming keystation

- For configuration via the keystation interface, see page 172.
- For configuration via the web interface, see page 104.

6 Connecting to the Internet

If your Internet Service is provided over an ADSL line you must configure the ADSL modem as described below.

If your Internet Service is provided by a Cable Modem you must configure the unit as an IP gateway. Go to page 87 for the details on configuring an IP Gateway.

ADSL Modem configuration

The Commander Pulse is configured with basic settings that will suit most ADSL connections. It is likely that the only information you need to program is the Username and Password for the Internet connection that is supplied by your ISP. See page 30.

Types of Internet Access

The types of Internet access available are as follows:

- **PPP Internet access** – your Commander Pulse uses a Point to Point Protocol (PPP) to carry data between your ISP and your computer. To use PPP Internet access, you must enter a PPP login username and password the first time to log on. The IP addresses required to access your ISP's Internet service are automatically configured. Your Commander Pulse supports two types of PPP –
  - PPPoE (over Ethernet)
  - PPPoA (over ATM).
- **DHCP Internet Access** – your ISP uses a protocol called Dynamic Host Configuration Protocol (DHCP) to assign addresses and manage your Commander Pulse. The Commander Pulse is automatically assigned the IP addresses that it needs to access the Internet.
- **Manual Internet Access** – you manually assign the addresses that your Commander Pulse needs in order to access the Internet. Your ISP should provide you with the necessary addresses.

Configuring a PPPoA ADSL connection

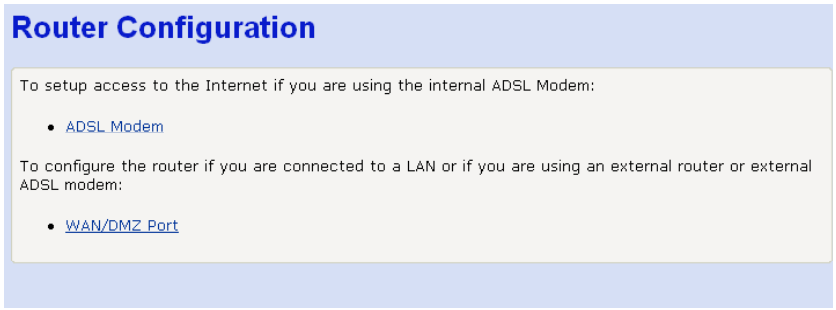
If your ISP's Internet service uses PPPoA you need to set up a PPP login account. The first time that you login to the Internet, your ISP will ask you to enter a username and password so they can check that you are a legitimate registered Internet service user. Your Commander Pulse stores these authentication details so you will not have to enter this username and password every time you login.
Your ISP may also tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your Commander Pulse to the ISP's Internet service. In most cases, your Commander Pulse will use default settings, so you may not need to enter these values.

Note

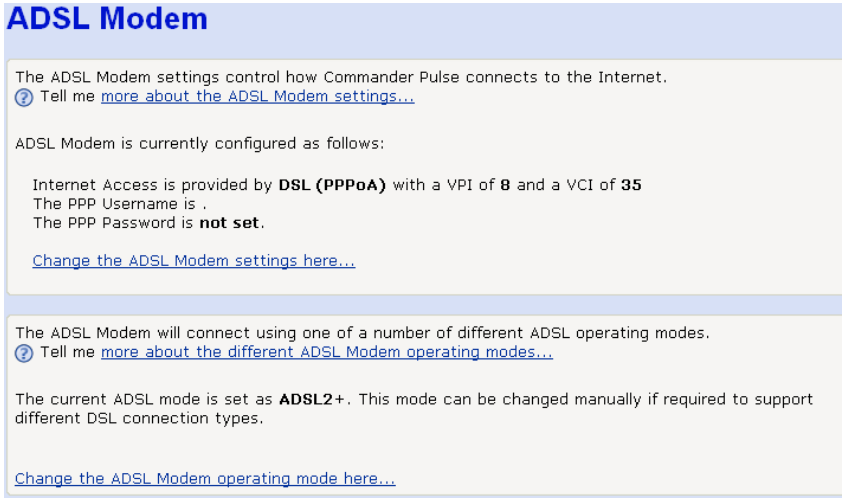
The default setting in the Commander Pulse used PPPoA with a VPI setting of 8 and a VCI setting of 35.

If your ISP wants you to connect to the Internet using PPPoA, follow the instructions below.

1. From the left-hand *Setup* menu, click on *Router Configuration*. The following page is displayed:

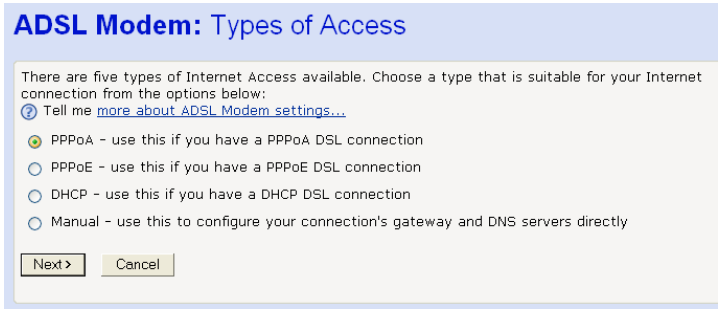

Router Configuration
To setup access to the Internet if you are using the internal ADSL Modem:
ADSL Modem
To configure the router if you are connected to a LAN or if you are using an external router or external ADSL modem:
WAN/DMZ Port

2. Click on ADSL Modem. The following page is displayed:

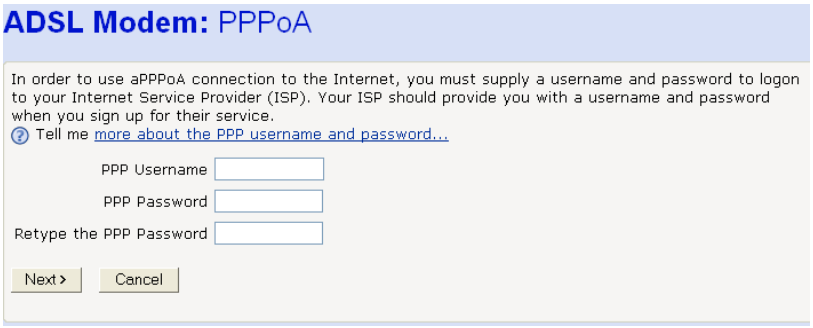

ADSL Modem
The ADSL Modem settings control how Commander Pulse connects to the Internet.
Tell me more about the ADSL Modem settings...
ADSL Modem is currently configured as follows:
Internet Access is provided by DSL (PPPoA) with a VPI of 8 and a VCI of 35
The PPP Username is .
The PPP Password is not set.
Change the ADSL Modem settings here...
The ADSL Modem will connect using one of a number of different ADSL operating modes.
Tell me more about the different ADSL Modem operating modes...
The current ADSL mode is set as ADSL2+. This mode can be changed manually if required to support different DSL connection types.
Change the ADSL Modem operating mode here...

This page displays information about your current Internet access configuration.

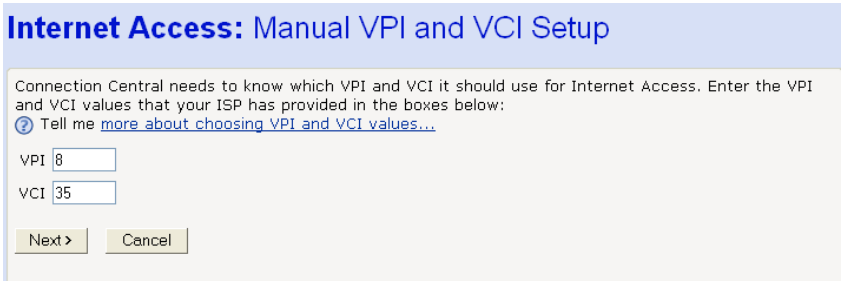
3. Select *Change the ADSL Modem settings here*. The following page is displayed


ADSL Modem: Types of Access
There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
PPPoA - use this if you have a PPPoA DSL connection
PPPoE - use this if you have a PPPoE DSL connection
DHCP - use this if you have a DHCP DSL connection
Manual - use this to configure your connection's gateway and DNS servers directly
Next >
Cancel

4. Select *PPPoA* and Click *Next*>. The following page is displayed:

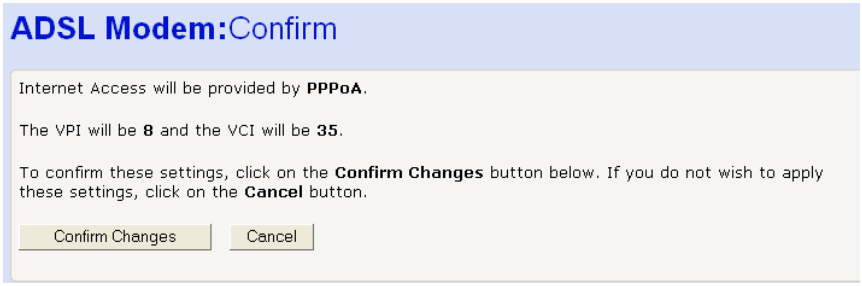

ADSL Modem: PPPoA
In order to use aPPPoA connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.
Tell me more about the PPP username and password...
PPP Username
PPP Password
Retype the PPP Password
Next >
Cancel

5. Enter the PPP username and password provided by your ISP. Type them in the relevant boxes,
6. Click *Next*>. The following page is displayed:


Internet Access: Manual VPI and VCI Setup
Connection Central needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:
Tell me more about choosing VPI and VCI values...
VPI 8
VCI 35
Next >
Cancel

The settings of VPI=8 and VCI=35 are the default settings. If your ISP has supplied you with different values enter them here.

7. Click *Next*>. The following page is displayed:


ADSL Modem:Confirm
Internet Access will be provided by PPPoA.
The VPI will be 8 and the VCI will be 35.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

This page confirms your PPPoA settings.

8. If you are happy with your settings, click *Confirm Changes*. The *Internet Access* page is displayed.

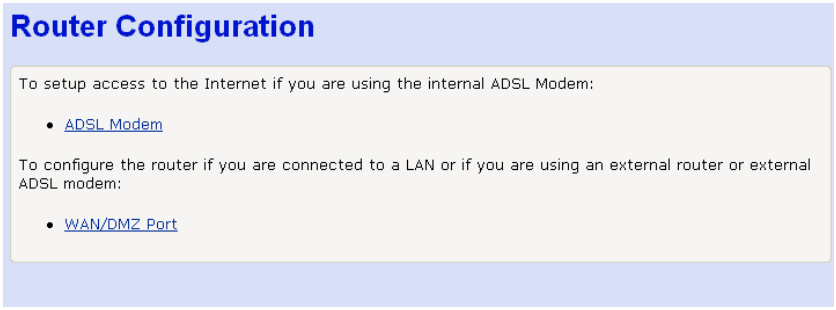
Configuring a PPPoE ADSL connection

If your ISP's Internet service uses PPPoE you need to set up a PPP login account. The first time that you login to the Internet, your ISP will ask you to enter a username and password so they can check that you are a legitimate registered Internet service user. Your Commander Pulse stores these authentication details so you will not have to enter this username and password every time you login.

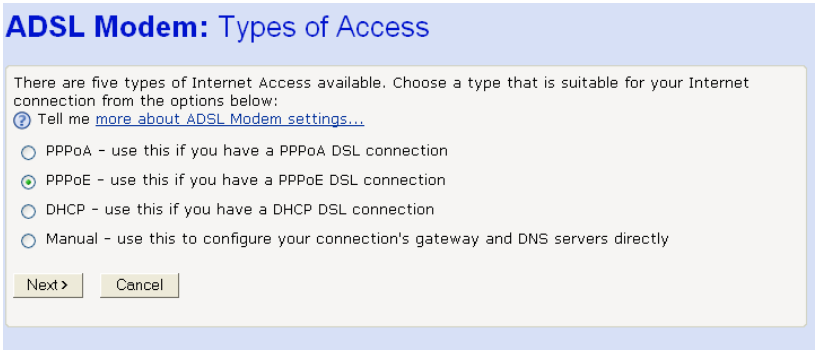
Your ISP may also tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your Commander Pulse to the ISP's Internet service. In most cases, your Commander Pulse will use default settings, so you may not need to enter these values.

If your ISP wants you to connect to the Internet using PPPoA, follow the instructions below.

1. From the left-hand *Setup* menu, click on "*Router Configuration*". The following page is displayed:

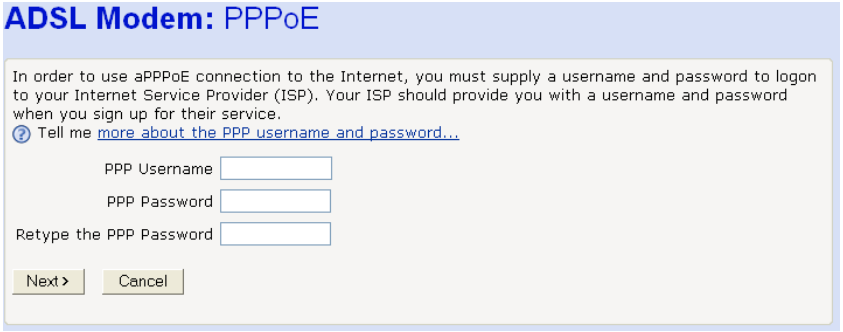

Router Configuration
To setup access to the Internet if you are using the internal ADSL Modem:
ADSL Modem
To configure the router if you are connected to a LAN or if you are using an external router or external ADSL modem:
WAN/DMZ Port

2. Click on "ADSL Modem". The following page is displayed:


ADSL Modem: Types of Access
There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
PPPoA - use this if you have a PPPoA DSL connection
PPPoE - use this if you have a PPPoE DSL connection
DHCP - use this if you have a DHCP DSL connection
Manual - use this to configure your connection's gateway and DNS servers directly
Next >
Cancel

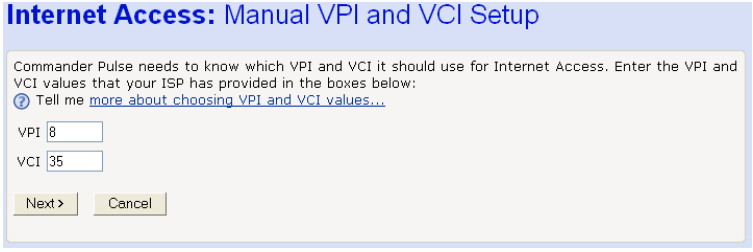
This page displays information about your current Internet access configuration.

3. Select *Change the ADSL Modem settings here*. The following page is displayed
4. Select *PPPoE* and Click *Next*>. The following page is displayed:


ADSL Modem: PPPoE
In order to use aPPPoE connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.
Tell me more about the PPP username and password...
PPP Username
PPP Password
Retype the PPP Password
Next >
Cancel

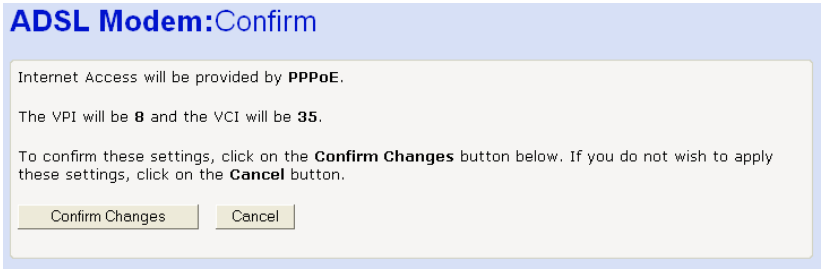
5. Enter the PPP username and password provided by your ISP. Type them in the relevant boxes.

6. Click "*Next>*". The following page is displayed:


Internet Access: Manual VPI and VCI Setup
Commander Pulse needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:
Tell me more about choosing VPI and VCI values...
VPI 8
VCI 35
Next >
Cancel

The settings of VPI=8 and VCI=35 are the default settings. If your ISP has supplied you with different values enter them here.

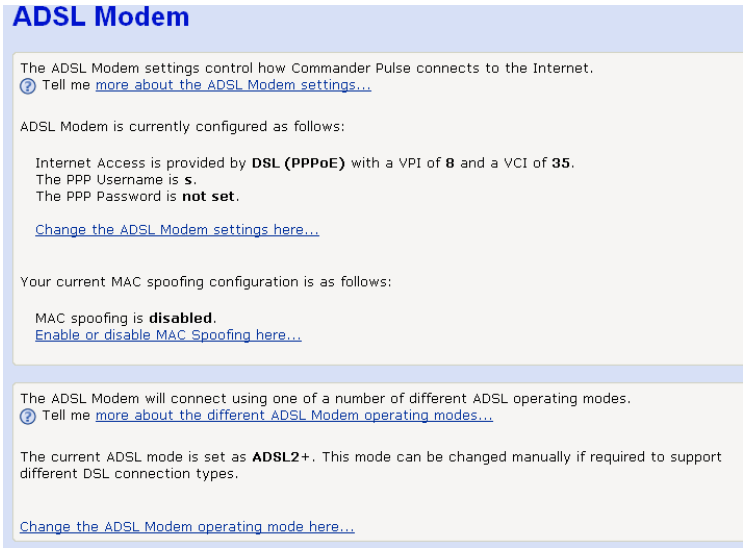
7. Click "*Next>*". The following page is displayed:


ADSL Modem:Confirm
Internet Access will be provided by PPPoE.
The VPI will be 8 and the VCI will be 35.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

This page confirms your PPPoE settings.

8. If you are happy with your settings, click "*Confirm Changes*". The *Internet Access* page is displayed.

As you have configured PPPoE Internet access, notice that an extra configuration option called *MAC Spoofing* appears on this page:


ADSL Modem
The ADSL Modem settings control how Commander Pulse connects to the Internet.
Tell me more about the ADSL Modem settings...
ADSL Modem is currently configured as follows:
Internet Access is provided by DSL (PPPoE) with a VPI of 8 and a VCI of 35.
The PPP Username is s.
The PPP Password is not set.
Change the ADSL Modem settings here...
Your current MAC spoofing configuration is as follows:
MAC spoofing is disabled.
Enable or disable MAC Spoofing here...
The ADSL Modem will connect using one of a number of different ADSL operating modes.
Tell me more about the different ADSL Modem operating modes...
The current ADSL mode is set as ADSL2+. This mode can be changed manually if required to support different DSL connection types.
Change the ADSL Modem operating mode here...

MAC spoofing allows you to set the Media Access Control (MAC) address of your Commander Pulse. See *Enabling MAC spoofing* below for more details.

Enabling MAC spoofing

Note

You should only enable MAC spoofing if your ISP has requested that you do so. In most cases, you will ***not*** *need to do this.*

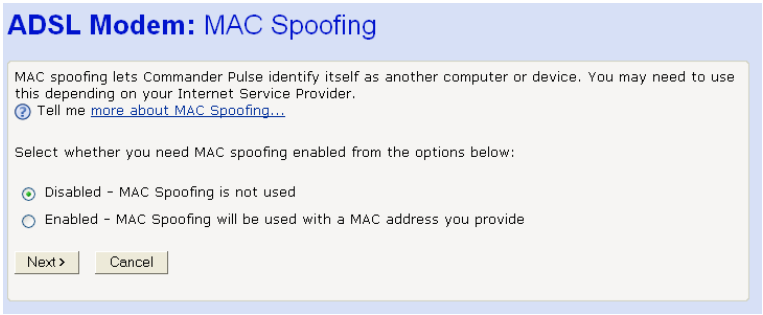
Your ISP identifies your modem by its unique hardware number or Media Access Control (MAC) address. If you are using PPPoE Internet access, your ISP may want you to *spoof* the identity of a different device. You can spoof the MAC address of another device by replacing your Commander Pulse's existing MAC address with another device's address. Your ISP will provide you with the replacement MAC address.

Note

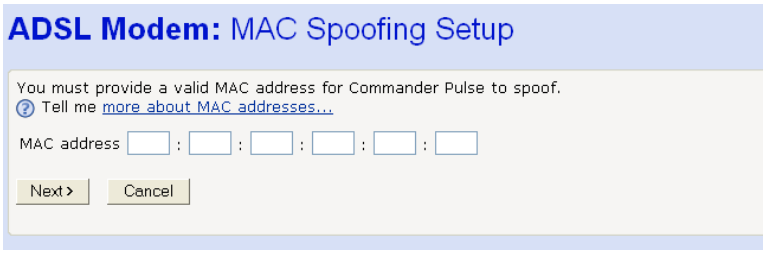
You can only configure MAC spoofing if you are using PPPoE Internet access.

If your ISP instructs you to change your Commander Pulse's default MAC address, follow the instructions below:

1. From the *Internet Access* page, click "*Enable" or "disable MAC Spoofing here…"* The following page is displayed:


ADSL Modem: MAC Spoofing
MAC spoofing lets Commander Pulse identify itself as another computer or device. You may need to use this depending on your Internet Service Provider.
Tell me more about MAC Spoofing...
Select whether you need MAC spoofing enabled from the options below:
Disabled - MAC Spoofing is not used
Enabled - MAC Spoofing will be used with a MAC address you provide
Next >
Cancel

2. Select "*Enabled*


ADSL Modem: MAC Spoofing Setup
You must provide a valid MAC address for Commander Pulse to spoof.
Tell me more about MAC addresses...
MAC address : : : : : :
Next >
Cancel

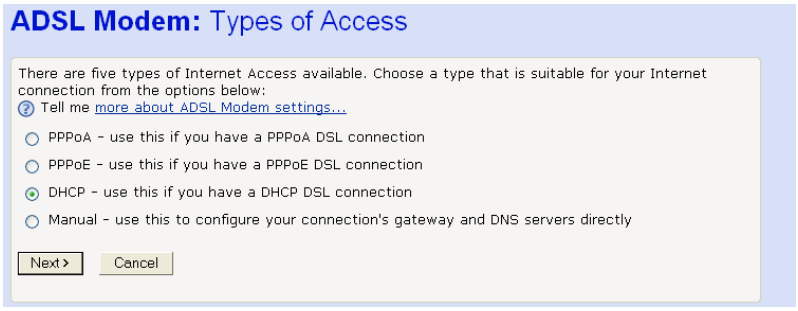
3. Click "*Next>"*. The following page is displayed:
4. The MAC address is made up of six pairs of characters. Each character can be either a number between 0 and 9, or a letter between A and F. For example, *00:20:2b:80:2f:30*. Click in each box and type each character pair of the MAC address provided by your ISP.
5. Click "*Next>"*. This page confirms your MAC spoofing settings. If you are happy with these settings,
6. Click "*Confirm Changes"*. The *Internet Access* page is displayed, and your MAC spoofing configuration is complete.

Configuring a DHCP ADSL connection – RFC 1483

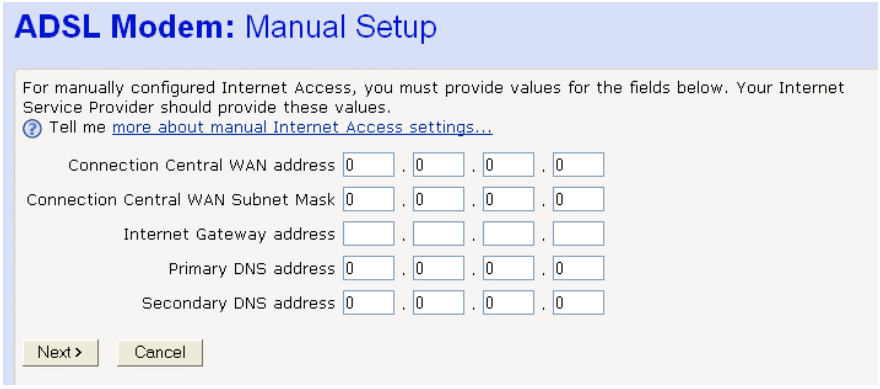
If your ISP uses a DHCP DSL connection, your ISP may tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your Commander Pulse to the ISP's Internet service. In most cases, your Commander Pulse will use default settings, so you may not need to enter these values.

Note

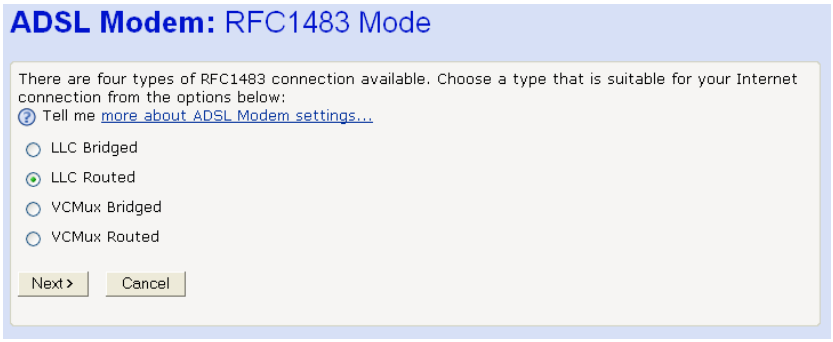
Your ISP will provide you with the VPI/VCI values necessary to setup a DHCP DSL connection.


ADSL Modem: Types of Access
There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
PPPoA - use this if you have a PPPoA DSL connection
PPPoE - use this if you have a PPPoE DSL connection
DHCP - use this if you have a DHCP DSL connection
Manual - use this to configure your connection's gateway and DNS servers directly
Next >
Cancel

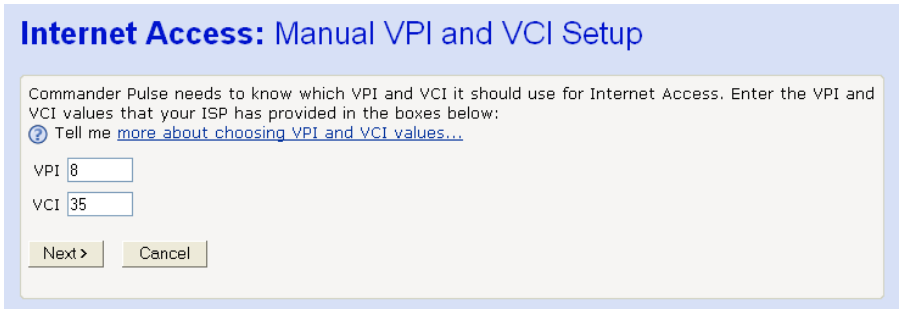
1. From the "ADSL Modem": Types of Access page select "DHCP" ,
2. Click "*Next>*". The following page is displayed


ADSL Modem: Manual Setup
For manually configured Internet Access, you must provide values for the fields below. Your Internet Service Provider should provide these values.
Tell me more about manual Internet Access settings...
Connection Central WAN address 0 . 0 . 0 . 0
Connection Central WAN Subnet Mask 0 . 0 . 0 . 0
Internet Gateway address . . .
Primary DNS address 0 . 0 . 0 . 0
Secondary DNS address 0 . 0 . 0 . 0
Next >
Cancel

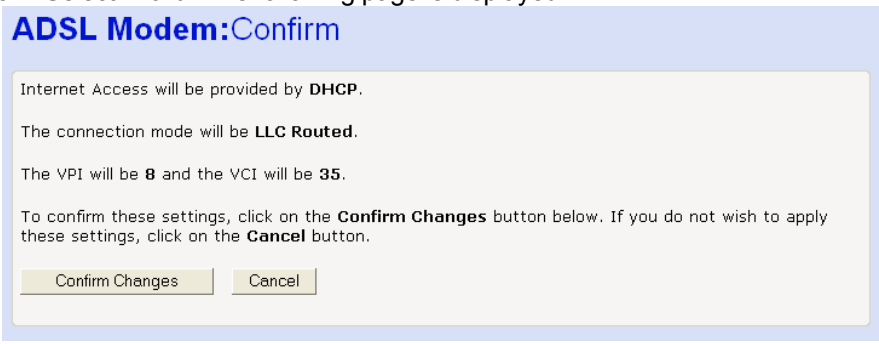
3. Select the option as indicated by your ISP. The following page is displayed


ADSL Modem: RFC1483 Mode
There are four types of RFC1483 connection available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
LLC Bridged
LLC Routed
VCMux Bridged
VCMux Routed
Next >
Cancel

4. Enter the VPI and VCI settings supplied by your ISP


Internet Access: Manual VPI and VCI Setup
Commander Pulse needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:
Tell me more about choosing VPI and VCI values...
VPI 8
VCI 35
Next >
Cancel

5. Select "*Next*". The following page is displayed:


ADSL Modem:Confirm
Internet Access will be provided by DHCP.
The connection mode will be LLC Routed.
The VPI will be 8 and the VCI will be 35.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

The settings are shown. If you are happy with them press "*Confirm Changes*".

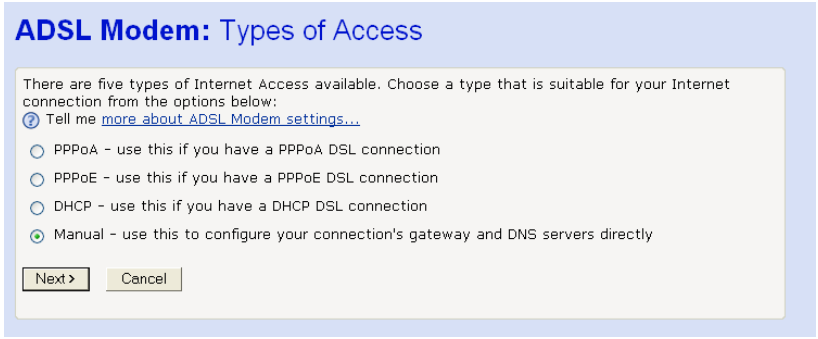
Configuring a Manual Internet Connection – RFC 1483

If your ISP tells you to configure your Internet access manually, they must provide you with the following information:

- The WAN IP address and subnet mask for your Commander Pulse
- The Internet Gateway address
- The primary and secondary DNS addresses

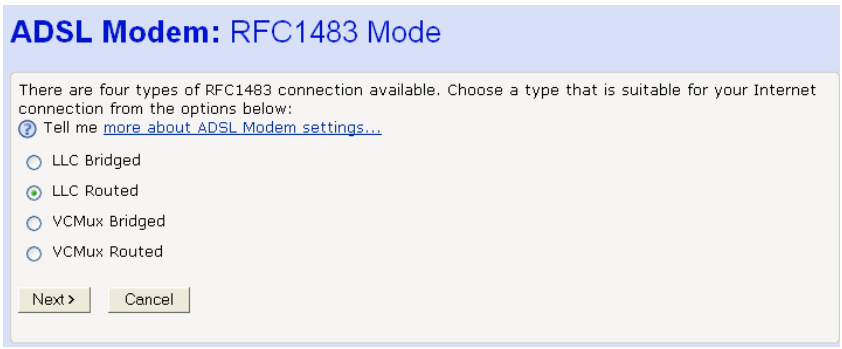
Note

You should only change the Internet Access details if your ISP asks you to, or if you are familiar with network configuration. In most cases, you will not need to make any changes to this configuration.

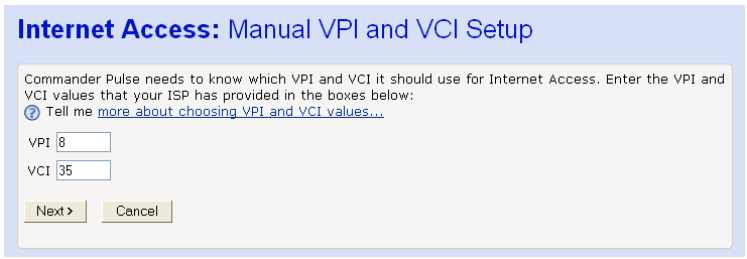

ADSL Modem: Types of Access
There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
PPPoA - use this if you have a PPPoA DSL connection
PPPoE - use this if you have a PPPoE DSL connection
DHCP - use this if you have a DHCP DSL connection
Manual - use this to configure your connection's gateway and DNS servers directly
Next >
Cancel

1. From the ADSL Modem: Types of Access page Select "*Manual*"
2. Click "*Next>*".

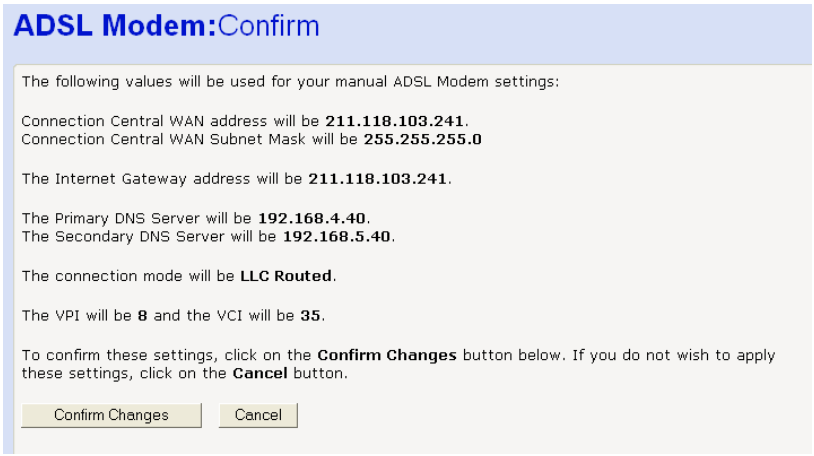
   The following page is displayed:


ADSL Modem: RFC1483 Mode
There are four types of RFC1483 connection available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about ADSL Modem settings...
LLC Bridged
LLC Routed
VCMux Bridged
VCMux Routed
Next >
Cancel

3. Click in each box and type the relevant address information provided by your ISP.
4. Click "*Next>*". The following page is displayed:
5. Select the Option provided by your ISP. The following page is displayed: -


Internet Access: Manual VPI and VCI Setup
Commander Pulse needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:
Tell me more about choosing VPI and VCI values...
VPI 8
VCI 35
Next >
Cancel

6. Enter the VPI and VCI values supplied by your ISP
7. Click "*Next>*". The following page is displayed: -

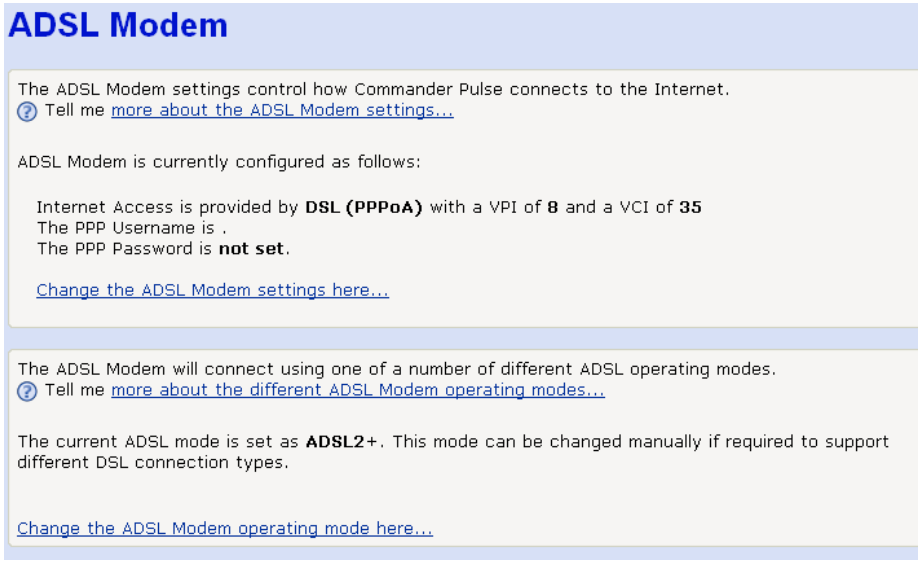

ADSL Modem:Confirm
The following values will be used for your manual ADSL Modem settings:
Connection Central WAN address will be 211.118.103.241.
Connection Central WAN Subnet Mask will be 255.255.255.0
The Internet Gateway address will be 211.118.103.241.
The Primary DNS Server will be 192.168.4.40.
The Secondary DNS Server will be 192.168.5.40.
The connection mode will be LLC Routed.
The VPI will be 8 and the VCI will be 35.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

This page confirms the address settings that you have manually configured (the values displayed above are for example purposes only). If you selected the *Manual* option at step 5, the VPI and VCI values that you entered are also displayed on this page.

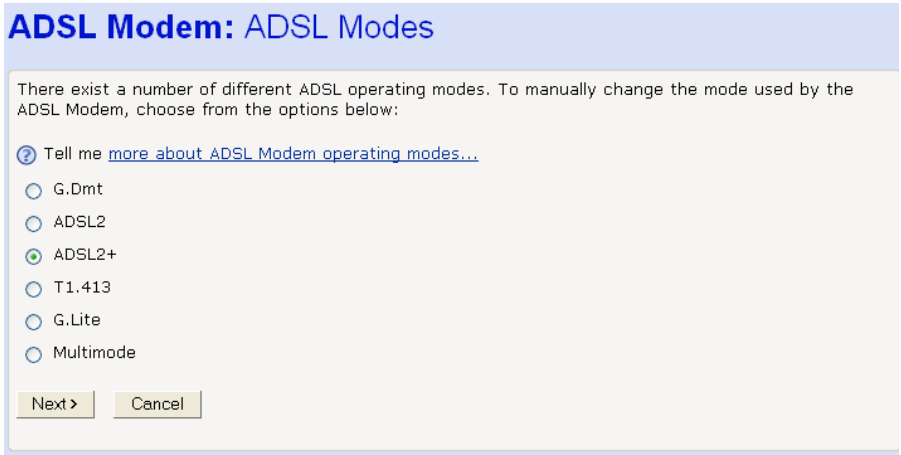
8. If you are happy with your settings, click "*Confirm Changes*". The *Internet Access* page is displayed and your configuration is complete.

Changing the ADSL Modem Operating Mode

The ADSL modem is configured to operate in ADSL2+ mode and will normally connect to the ADSL line using the appropriate mode for the line. There may be cases where it is necessary to change the operation mode manually.


ADSL Modem
The ADSL Modem settings control how Commander Pulse connects to the Internet.
Tell me more about the ADSL Modem settings...
ADSL Modem is currently configured as follows:
Internet Access is provided by DSL (PPPoA) with a VPI of 8 and a VCI of 35
The PPP Username is .
The PPP Password is not set.
Change the ADSL Modem settings here...
The ADSL Modem will connect using one of a number of different ADSL operating modes.
Tell me more about the different ADSL Modem operating modes...
The current ADSL mode is set as ADSL2+. This mode can be changed manually if required to support different DSL connection types.
Change the ADSL Modem operating mode here...

1. On the ADSL modem page shown above select 'Change the ADSL Modem operating mode'

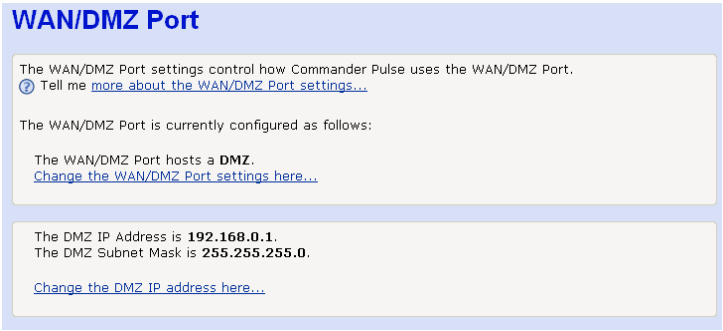

ADSL Modem: ADSL Modes
There exist a number of different ADSL operating modes. To manually change the mode used by the ADSL Modem, choose from the options below:
Tell me more about ADSL Modem operating modes...
G.Dmt
ADSL2
ADSL2+
T1.413
G.Lite
Multimode
Next >
Cancel

2. Select the appropriate Operating Mode. The information on the appropriate mode is available from your ISP.

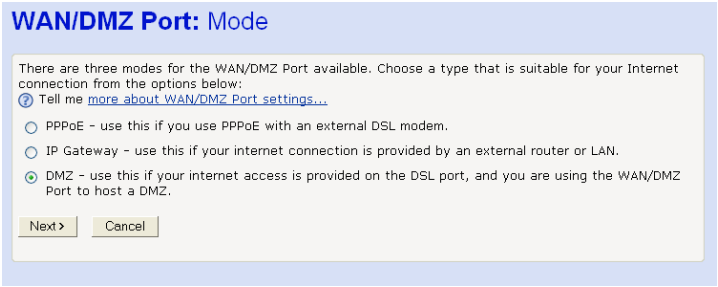
Connecting to an External ADSL Modem, Cable Modem, LAN, WAN or add a host to the DMZ

The WAN/DMZ port can be used to connect to an external ADSL modem, a LAN or a WAN, or to add a host to the DMZ.

1. Select *Router Configuration* from the main menu
2. Select *WAN/DMZ Port* from the sub-menu. The following screen is displayed:


WAN/DMZ Port
The WAN/DMZ Port settings control how Commander Pulse uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port hosts a DMZ.
Change the WAN/DMZ Port settings here...
The DMZ IP Address is 192.168.0.1.
The DMZ Subnet Mask is 255.255.255.0.
Change the DMZ IP address here...

3. Select the *Change the WAN/DMZ settings here*. The following screen is displayed


WAN/DMZ Port: Mode
There are three modes for the WAN/DMZ Port available. Choose a type that is suitable for your Internet connection from the options below:
Tell me more about WAN/DMZ Port settings...
PPPoE - use this if you use PPPoE with an external DSL modem.
IP Gateway - use this if your internet connection is provided by an external router or LAN.
DMZ - use this if your internet access is provided on the DSL port, and you are using the WAN/DMZ Port to host a DMZ.
Next >
Cancel

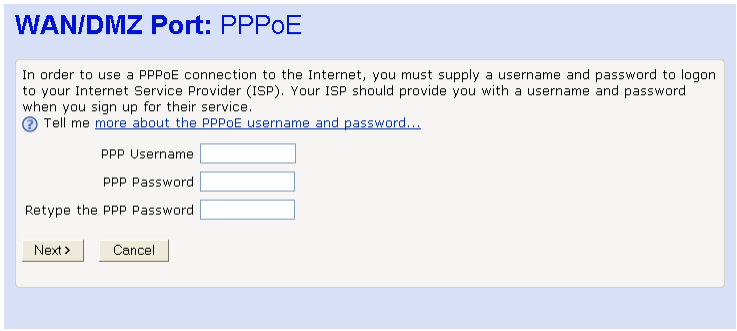
Three options are presented.

- PPPoE
- IP Gateway
- DMZ.

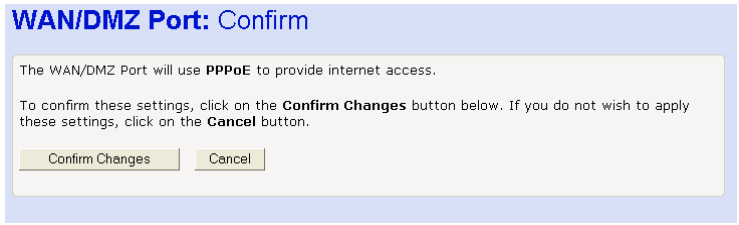
PPPoE to connect to an external ADSL modem

PPPoE is used when connecting to an external ADSL modem. As the Commander Pulse is equipped with an ADSL modem we recommend that the internal modem be used rather than an external ADSL modem. In this case go to ASDL Modem configuration on page 76. If you wish to use the external ADSL modem proceed as follows:

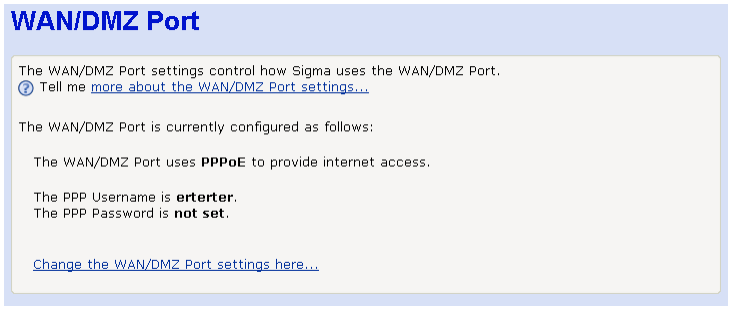
1. Select "*PPPoE*". Click Next. The following screen is displayed


WAN/DMZ Port: PPPoE
In order to use a PPPoE connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.
Tell me more about the PPPoE username and password...
PPP Username
PPP Password
Retype the PPP Password
Next >
Cancel

2. Enter a Username and Password. Retype the Password. Select *Next*. The following screen is displayed


WAN/DMZ Port: Confirm
The WAN/DMZ Port will use PPPoE to provide internet access.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

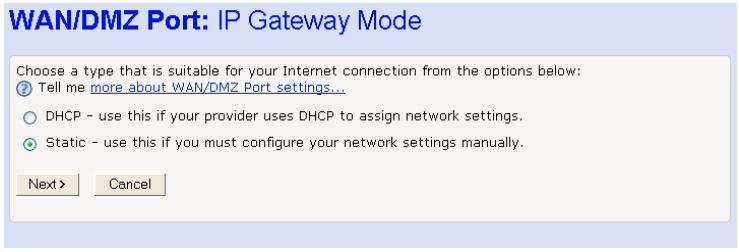
3. Select *Confirm Changes*. The following screen is displayed


WAN/DMZ Port
The WAN/DMZ Port settings control how Sigma uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port uses PPPoE to provide internet access.
The PPP Username is erterter.
The PPP Password is not set.
Change the WAN/DMZ Port settings here...

The PPPoE setup is now complete

IP Gateway to connect to Cable Modem, LAN or WAN

IP Gateway is typically used when connecting to a Cable Modem LAN or WAN.
Select *IP Gateway*. Select *Next.* The following screen is displayed


WAN/DMZ Port: IP Gateway Mode
Choose a type that is suitable for your Internet connection from the options below:
Tell me more about WAN/DMZ Port settings...
DHCP - use this if your provider uses DHCP to assign network settings.
Static - use this if you must configure your network settings manually.
Next >
Cancel

Two options are presented:

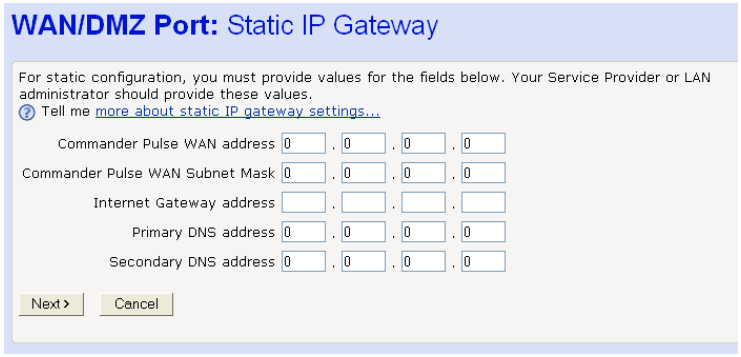
- DHCP - automatically assigns IP addresses
- Static - allows the IP addresses to be entered manually

DHCP

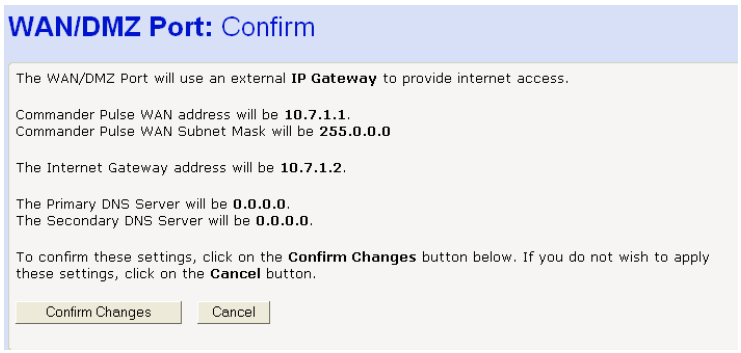
This is described in detail earlier in this manual. For details see Page 31.

Static

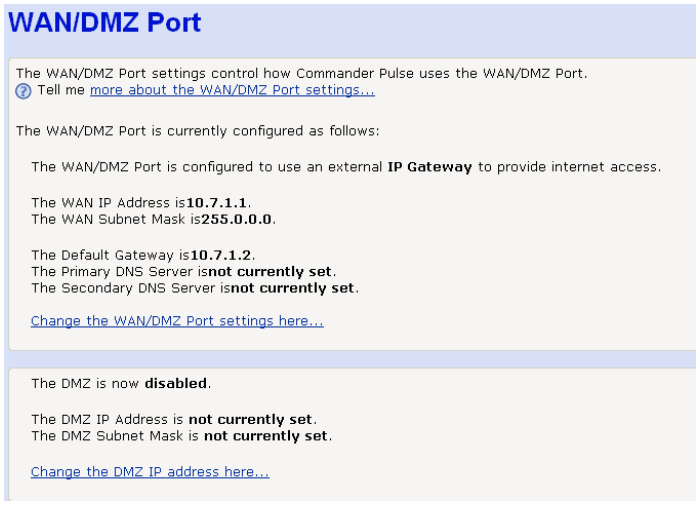
1. Select "*Static*".
2. Click *Next*. The following screen is displayed.


WAN/DMZ Port: Static IP Gateway
For static configuration, you must provide values for the fields below. Your Service Provider or LAN administrator should provide these values.
Tell me more about static IP gateway settings...
Commander Pulse WAN address
Commander Pulse WAN Subnet Mask
Internet Gateway address
Primary DNS address
Secondary DNS address
Next >
Cancel

3. Enter the IP addresses and Subnet mask. Click *Next*. The following screen is displayed.


WAN/DMZ Port: Confirm
The WAN/DMZ Port will use an external IP Gateway to provide internet access.
Commander Pulse WAN address will be 10.7.1.1.
Commander Pulse WAN Subnet Mask will be 255.0.0.0
The Internet Gateway address will be 10.7.1.2.
The Primary DNS Server will be 0.0.0.0.
The Secondary DNS Server will be 0.0.0.0.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

4. Select Confirm Changes. The following screen is displayed:


WAN/DMZ Port
The WAN/DMZ Port settings control how Commander Pulse uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port is configured to use an external IP Gateway to provide internet access.
The WAN IP Address is10.7.1.1.
The WAN Subnet Mask is255.0.0.0.
The Default Gateway is10.7.1.2.
The Primary DNS Server isnot currently set.
The Secondary DNS Server isnot currently set.
Change the WAN/DMZ Port settings here...
The DMZ is now disabled.
The DMZ IP Address is not currently set.
The DMZ Subnet Mask is not currently set.
Change the DMZ IP address here...

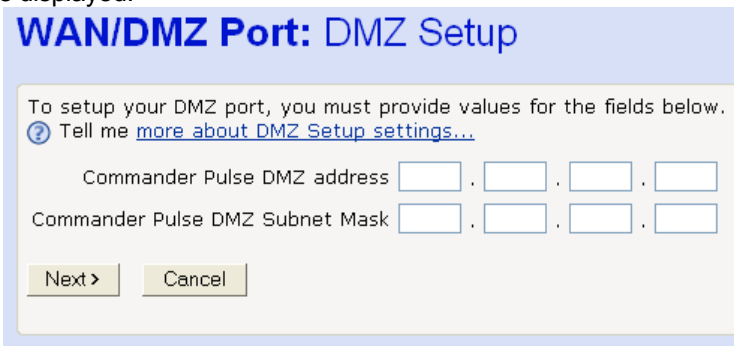
The Static IP Gateway setup is now complete.

DMZ

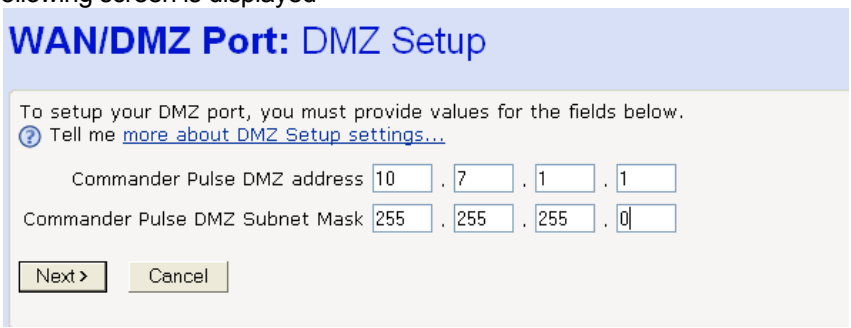
A host can be connected to the WAN/DMZ Port. In default the Wan/DMZ port is configured as a DMZ. On the Router configuration page select *WAN/DMZ Port*. The following page is displayed:

WAN/DMZ Port
The WAN/DMZ Port settings control how Commander Pulse uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port hosts a DMZ.
Change the WAN/DMZ Port settings here...
The DMZ IP Address is 0.0.0.0.
The DMZ Subnet Mask is 0.0.0.0.
Change the DMZ IP address here...

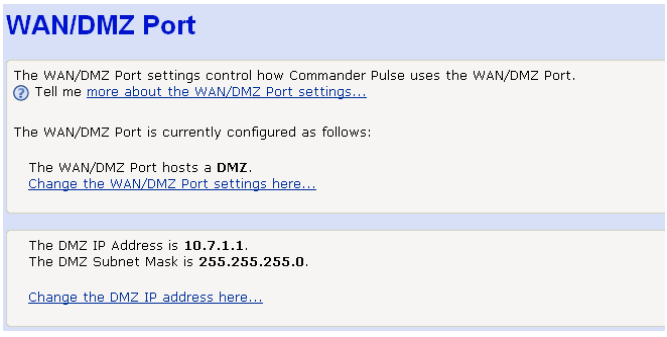
1. Select *Change the DMZ IP address here.* The following page is displayed:


WAN/DMZ Port: DMZ Setup
To setup your DMZ port, you must provide values for the fields below.
Tell me more about DMZ Setup settings...
Commander Pulse DMZ address
Commander Pulse DMZ Subnet Mask
Next >
Cancel

2. Enter the host IP address and subnet mask. Click *Next.* The following screen is displayed


WAN/DMZ Port: DMZ Setup
To setup your DMZ port, you must provide values for the fields below.
Tell me more about DMZ Setup settings...
Commander Pulse DMZ address 10 . 7 . 1 . 1
Commander Pulse DMZ Subnet Mask 255 . 255 . 255 . 0
Next >
Cancel

3. Select *Confirm Changes*. The following screen is displayed


WAN/DMZ Port
The WAN/DMZ Port settings control how Commander Pulse uses the WAN/DMZ Port.
Tell me more about the WAN/DMZ Port settings...
The WAN/DMZ Port is currently configured as follows:
The WAN/DMZ Port hosts a DMZ.
Change the WAN/DMZ Port settings here...
The DMZ IP Address is 10.7.1.1.
The DMZ Subnet Mask is 255.255.255.0.
Change the DMZ IP address here...

The DMZ setup is now complete.

Password

You can restrict access to your Commander Pulse's web pages using password protection. With password protection enabled, users must enter a username and password before gaining access to the web pages.
By default, password protection is enabled on your Commander Pulse, and the username and password set are as follows:

- Username: **admin**
- Password: **admin**

For more information, see *Accessing the Web pages* on page 23.

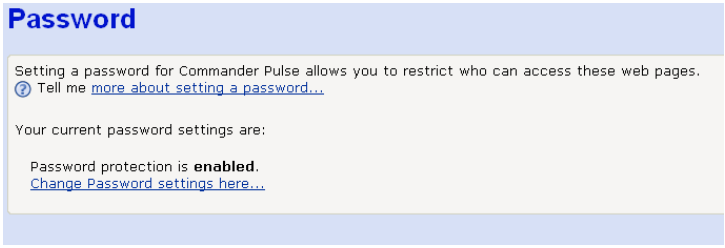
Setting your username and password

Note

Non-authorized users may try to access your system by guessing your username and password. We recommend that you change the default username and password to your own unique settings.

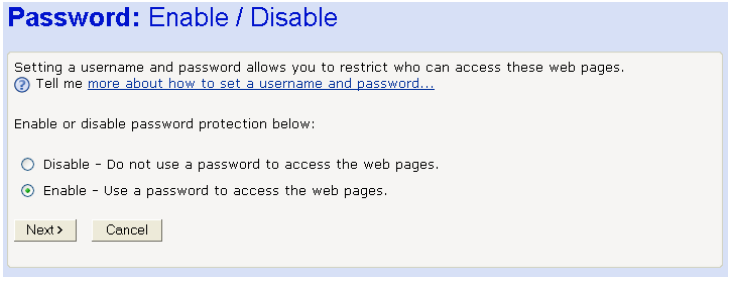
To set your own username and password:

1. From the left-hand Router Configuration main menu, click on Password in the sub-menu. The following page is displayed:

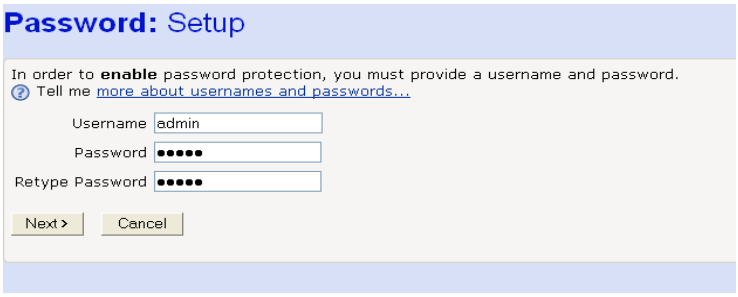

Password
Setting a password for Commander Pulse allows you to restrict who can access these web pages.
Tell me more about setting a password...
Your current password settings are:
Password protection is enabled.
Change Password settings here...

This page displays the current status of password protection.

2. Click on Change Password settings here… The following page is displayed:


Password: Enable / Disable
Setting a username and password allows you to restrict who can access these web pages.
Tell me more about how to set a username and password...
Enable or disable password protection below:
Disable - Do not use a password to access the web pages.
Enable - Use a password to access the web pages.
Next >
Cancel

This page allows you to enable or disable password protection. Protection is already enabled by default. Click *Next>*. The following page is displayed:



This page displays the current username and password settings. Type your own unique username and password in the relevant boxes. They can be any combination of letters or numbers with a maximum of 20 characters. The default setting uses *admin* for both the username and password. We recommend that you **do not** set the same character combination for both username and password

3. Click Next>. The following page is displayed:

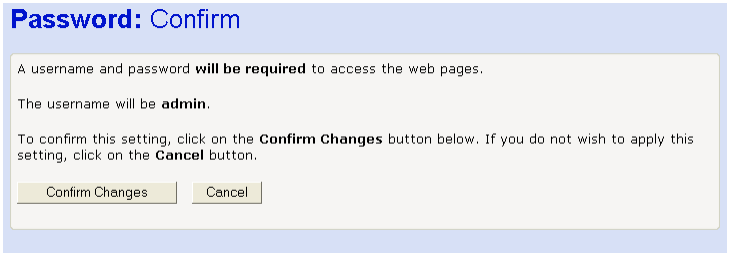
Password: Confirm
A username and password will not be required to access the web pages.
To confirm this setting, click on the Confirm Changes button below. If you do not wish to apply this setting, click on the Cancel button.
Confirm Changes
Cancel

This page confirms that password protection is enabled and displays the username that will be required in order to access the web pages.

4. If you are happy with these settings, click *Confirm Changes*. The *Enter Network Password* login box is displayed. You need to login to the web pages using your new username and password. For details of how to do this, see *Accessing the Web pages* on page 23.

Disabling password protection

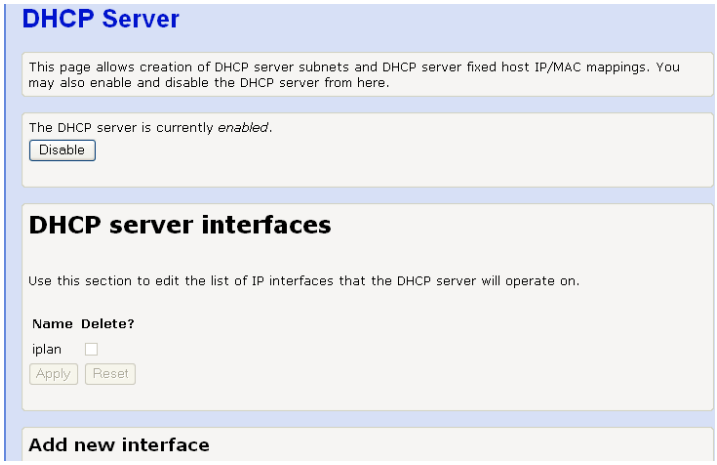
If you do not want to use password protection, follow the instructions in 'Setting your username and password' on page 90 and at Step 3, select *Disable* and then click *Next>.* The following page is displayed.


Password: Confirm
A username and password will be required to access the web pages.
The username will be admin.
To confirm this setting, click on the Confirm Changes button below. If you do not wish to apply this setting, click on the Cancel button.
Confirm Changes
Cancel

DHCP Server

A DHCP (Dynamic Host Configuration Protocol) Server is a system that assigns IP addresses to the multiple stations on the network.
Dynamic Host Configuration Protocol is a scheme where a client host "leases" an IP address. This can be great on a large-scale network because it assigns an IP address, and many other options, such as DNS servers, WINS Servers, and other options.

1. Select *Router Configuration* from the main menu.
2. Select *DHCP Server* from the sub-menu. The following page is presented.


DHCP Server
This page allows creation of DHCP server subnets and DHCP server fixed host IP/MAC mappings. You may also enable and disable the DHCP server from here.
The DHCP server is currently enabled.
Disable
DHCP server interfaces
Use this section to edit the list of IP interfaces that the DHCP server will operate on.
Name Delete?
iplan
Apply
Reset
Add new interface

Enable/Disable

The DHCP server is enabled by default. It can be disabled if required. Select 'Disable' to disable DHCP.

DHCP Server Interfaces

By default the DHCP server operates on the iplan interfaces. There is an option to delete DHCP on each interface. The DHCP Server must be disabled before an Interface can be deleted.

Add new interface

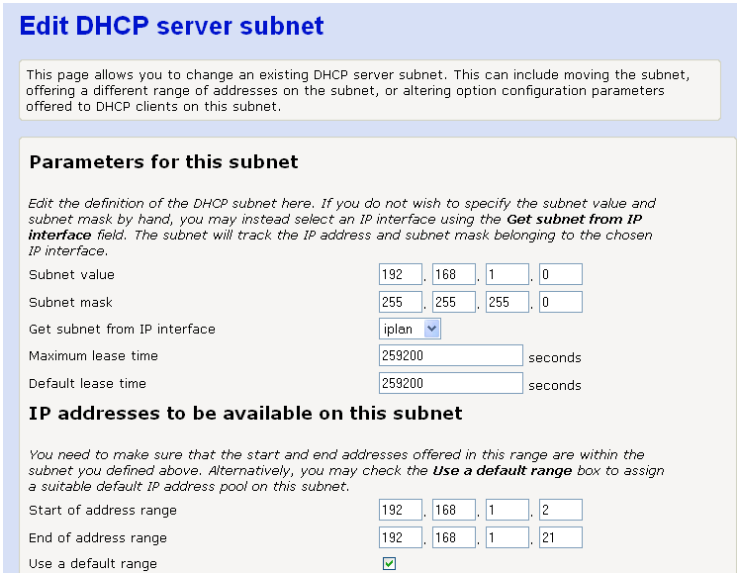
There is an option to tell the DHCP server to operate on the ipdmz interface as well as the iplan.

Existing DHCP Server Subnets

The settings for the existing subnets on the iplan and ipdmz are displayed.
All displayed parameters can be changed – change the setting to a new value and click "Apply".
To delete a subnet, check the associated box and select "Apply".

Advanced Options

Select "Advanced Options"
The following screen is displayed


Edit DHCP server subnet
This page allows you to change an existing DHCP server subnet. This can include moving the subnet, offering a different range of addresses on the subnet, or altering option configuration parameters offered to DHCP clients on this subnet.
Parameters for this subnet
Edit the definition of the DHCP subnet here. If you do not wish to specify the subnet value and subnet mask by hand, you may instead select an IP interface using the Get subnet from IP interface field. The subnet will track the IP address and subnet mask belonging to the chosen IP interface.
Subnet value
192 . 168 . 1 . 0
Subnet mask
255 . 255 . 255 . 0
Get subnet from IP interface
iplan
Maximum lease time
259200 seconds
Default lease time
259200 seconds
IP addresses to be available on this subnet
You need to make sure that the start and end addresses offered in this range are within the subnet you defined above. Alternatively, you may check the Use a default range box to assign a suitable default IP address pool on this subnet.
Start of address range
192 . 168 . 1 . 2
End of address range
192 . 168 . 1 . 21
Use a default range

Parameters for this subnet

The current subnet parameters are shown. These can be changed if required.

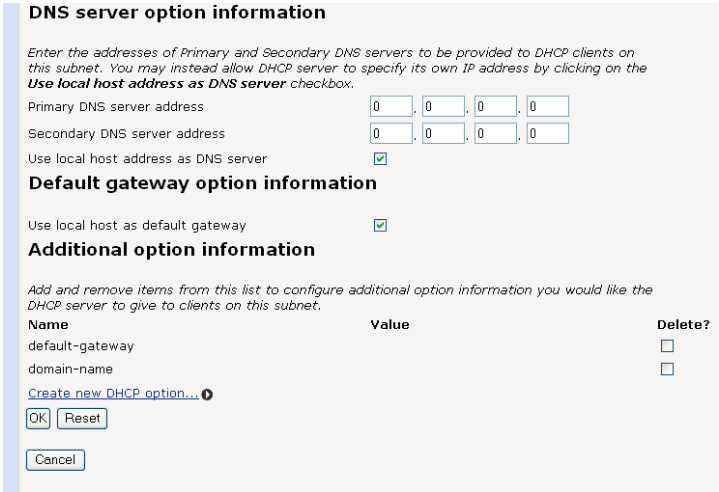
IP addresses to be available on this subnet

The range of IP addresses available on the subnet is shown. These can be changed if required.

DNS Server option information

The default setting is use local host as the DNS server - all DNS requests are sent to the default gateway 192.168.1.1 which then relays the request to the DNS addresses negotiated at start up. Specific DNS servers can be defined if required.

Default gateway option information

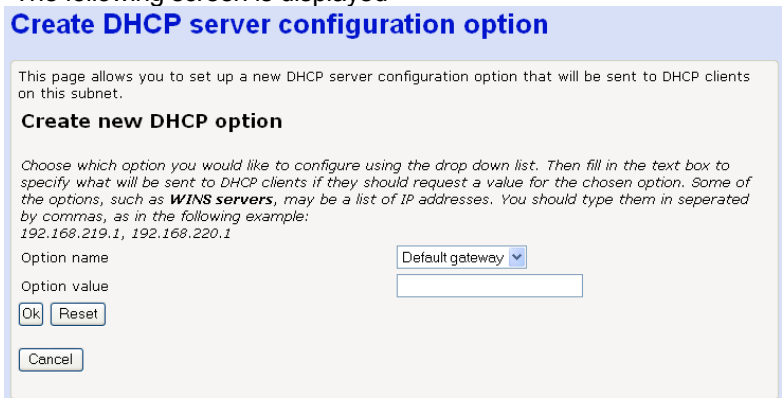

DNS server option information
Enter the addresses of Primary and Secondary DNS servers to be provided to DHCP clients on this subnet. You may instead allow DHCP server to specify its own IP address by clicking on the Use local host address as DNS server checkbox.
Primary DNS server address
0 . 0 . 0 . 0
Secondary DNS server address
0 . 0 . 0 . 0
Use local host address as DNS server
Default gateway option information
Use local host as default gateway
Additional option information
Add and remove items from this list to configure additional option information you would like the DHCP server to give to clients on this subnet.
Name
Value
Delete?
default-gateway
domain-name
Create new DHCP option...
OK
Reset
Cancel

Use local host as default gateway is checked by default.

Additional option information

Select Create new DHCP option …

The following screen is displayed


Create DHCP server configuration option
This page allows you to set up a new DHCP server configuration option that will be sent to DHCP clients on this subnet.
Create new DHCP option
Choose which option you would like to configure using the drop down list. Then fill in the text box to specify what will be sent to DHCP clients if they should request a value for the chosen option. Some of the options, such as WINS servers, may be a list of IP addresses. You should type them in seperated by commas, as in the following example:
192.168.219.1, 192.168.220.1
Option name
Default gateway
Option value
Ok
Reset
Cancel

Select on of the following options from the drop down menu:

Select the option required from the drop down menu.

- Default gateway
- Domain name
- IRC server
- HTTP server
- SMTP server
- POP3 server
- NNTP server
- WINS server
- Time server

Enter the option value in the field below.
Select OK

To create a new subnet

1. Select Create new subnet.

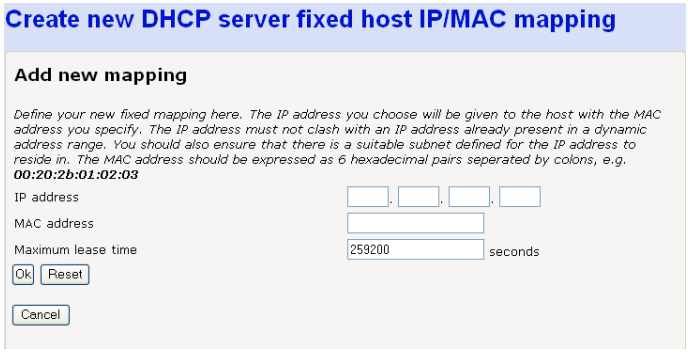
The screen displayed is the same as Edit DHCP server subnet with the Additional option information option.

To always assign the same IP address to a host

The same IP address is always assigned to a specific host with the specified MAC address.

1. Select "Create new Fixed Host …"

The following screen is displayed:


Create new DHCP server fixed host IP/MAC mapping
Add new mapping
Define your new fixed mapping here. The IP address you choose will be given to the host with the MAC address you specify. The IP address must not clash with an IP address already present in a dynamic address range. You should also ensure that there is a suitable subnet defined for the IP address to reside in. The MAC address should be expressed as 6 hexadecimal pairs seperated by colons, e.g.
00:20:2b:01:02:03
IP address
MAC address
Maximum lease time
259200
seconds
Ok
Reset
Cancel

Enter the IP address to be assigned to the host
Enter the MAC address of the host

Enter the maximum lease time in seconds
Select “OK”.

Addressing

The *Addressing* page displays information about your LAN IP address and allows you to change the address and subnet mask assigned to your Commander Pulse.

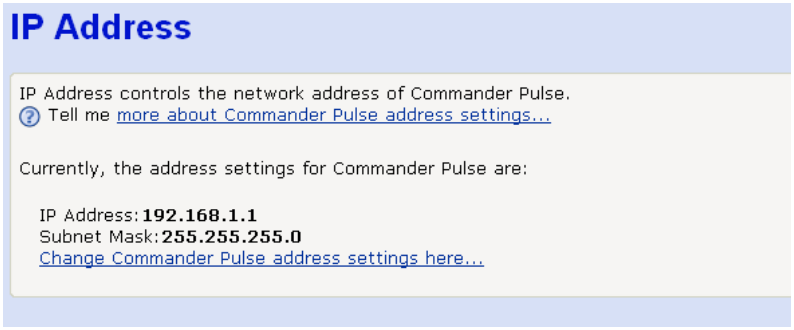
Note

You should only change the addressing details if your ISP asks you to, or if you are familiar with network configuration. In most cases, you will not need to make any changes to this configuration.

Changing the LAN IP address and subnet mask

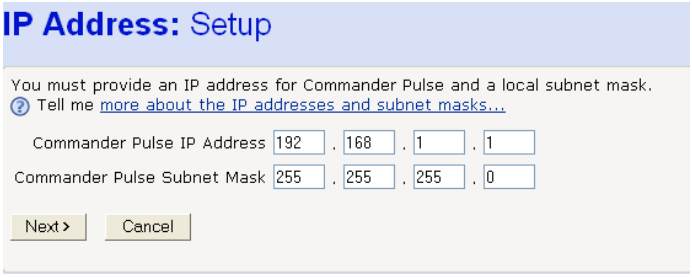
Select *Router Configuration* from the main menu.

1. From the submenu, click on IP Address. The following page is displayed:


IP Address
IP Address controls the network address of Commander Pulse.
Tell me more about Commander Pulse address settings...
Currently, the address settings for Commander Pulse are:
IP Address: 192.168.1.1
Subnet Mask: 255.255.255.0
Change Commander Pulse address settings here...

This page displays the current IP address and subnet mask assigned to your Commander Pulse. The default LAN IP configuration is IP address *192.168.1.1*, subnet mask *255.255.255.0*.

2. Click on Change Commander Pulse Address settings here… The following page is displayed:


IP Address: Setup
You must provide an IP address for Commander Pulse and a local subnet mask.
Tell me more about the IP addresses and subnet masks...
Commander Pulse IP Address 192 . 168 . 1 . 1
Commander Pulse Subnet Mask 255 . 255 . 255 . 0
Next >
Cancel

1. Click in the IP Address and Subnet Mask boxes and type the new address details.

Note

Your LAN PCs must remain on the same subnet as your Commander Pulse (that is, the subnet masks must be the same) For more information about IP addresses and subnets, see IP Addresses on page 193. If necessary, reconfigure the LAN PCs so that their IP addresses place them in the same subnet as the new Commander Pulse IP address. See Configuring Ethernet PCs on page 202.

2. Click *Next>*. The following page is displayed:

3. This page displays the new IP address and subnet mask and asks you to confirm whether these are correct. Click *Confirm Changes*. The *Addressing* page is displayed, confirming your new LAN address settings.

Note

If you change the LAN IP address of the Commander Pulse while connected through your Web browser, you will be disconnected. You must open a new connection by entering your new LAN IP address as the URL. See Accessing the Web pages on page 23.

7 PABX Configuration using the web interface

Your PABX (Phone System) can be completely configured via the web management system.

The web management Welcome page contain a link to Basic PABX Settings, which are the configuration options that the user will most likely wish to change.

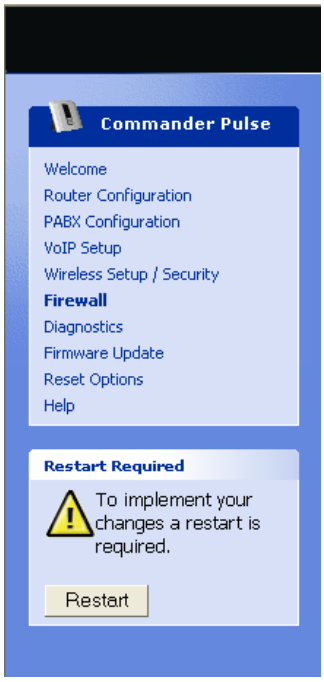
The Basic PABX Settings are:

- Incoming Ringing
- Station Names
- Outgoing Restriction
- Station Class of Service
- Cordless Registration
- Line Forwarding

Instruction for setting these basic options are given below.

Additional instructions are also included for all other PABX configuration options. These may be accessed by selecting PABX Configuration from the main menu and then using the sub-menu below to access individual functions.

Some programming changes require the system to be restarted. A prompt, shown below, will appear on the left-hand side of the screen. The Restart must be selected before you exit to ensure the settings take effect.



Incoming Ringing

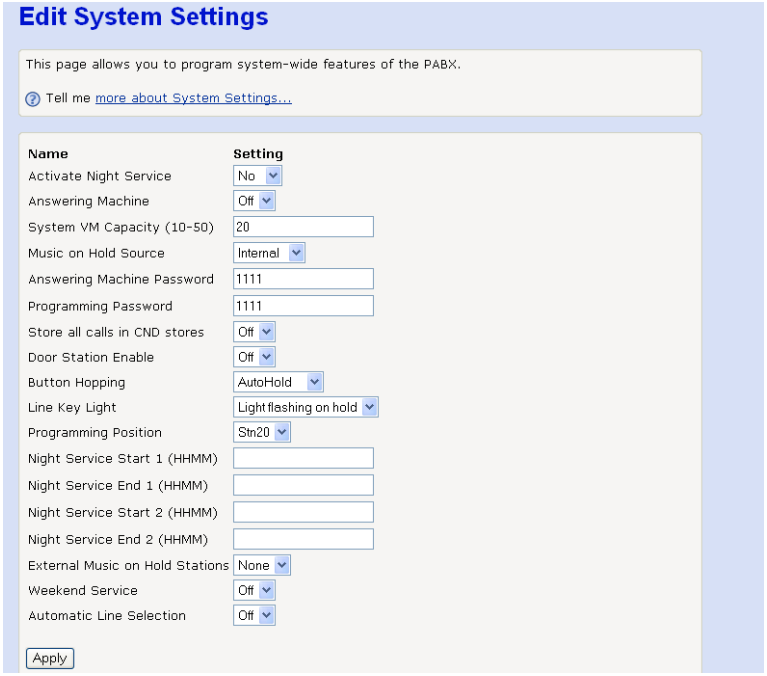
By associating lines with individual stations, you can have lines ringing different stations in Day and Night modes.
For example, in DAY mode, all calls on line1 might ring all phones, but in NIGHT mode all calls on line 1 might be set to only ring station 20.
Also, in both DAY & NIGHT modes, all calls on IP Trunk (VoIP) might be set to ring on station 23 only.

To change the settings, select ON or OFF from the relevant drop down box for the Line/Station configuration you require.

The default is that ALL lines ring ALL wired stations and the first four cordless phones in both Day and Night Modes.

System Settings

Use this screen to program system wide settings for your system.



Activate Night Service

This feature allows the user to activate night service (normally out-of-hours working). Night service set-up is used to define which station rings on incoming calls, what the Class of Service is for each station and what type of voice greeting is played. The system operates in DAY MODE unless the night service option is specifically programmed to operate.

Answering Machine

This turns the Answering Machine on and off. In default all incoming calls are forwarded on no answer to the answering machine. However if you want to be able to activate the answering machine and turn it on and off firstly associate the answering machine with a line or lines (see page 108) and then turn the answering machine on. This can be done from a keystation or from this setting.

System VM Capacity

This setting determines the number of messages that may be stored in the answering machine.

Music on Hold Source

This options determines what a caller will hear when a call in placed on Hold.
Select the required option below from the drop-down box.

- Silence
- Tone
- External – selects an external music source connected via an station. See Music on Hold Station, below.
- Internal (Default – Internal system recording)

Answering Machine Password

The password can be between 1 and 8 digits long and can be any number between 1 and 99999999
This is the password used to access the system answering machine from station 20.

Programming Password

The password is 4 digits long and can be any number between 0000 and 9999
This is the password used to access the programming functions on the system when using a keystation programming position

Store All Calls in the CND Stores

Use this setting to determine what received calls are recorded by the system in the CND Lists.
If set to OFF, only missed calls will be listed. If set to ON, all calls, including answered calls will be listed in the CND lists.

Door station Enable

Use this to enable the operation of a Door station connected via the system.

Button Hopping

When Button hopping is enabled if you press a second line key while on a call on another line the first call is disconnected. With button hopping off the first call is placed on hold when the second line key is pressed.

Line Key Light

This allows you to have the line key light flashing or steady when a call is placed on hold. The default is flashing.

Night Services Start 1 (HHMM)

The time in 24-hour clock formats (HH:MM) at which night service 1 is activated on the system.

Night Service End 1 (HHMM)

The time in 24-hour clock formats (HH:MM) at which night service 1 is deactivated on the system.

Night Service Start 2 (HHMM)

The time in 24-hour clock formats (HHMM) at which night service 2 is activated on the system.

Night Service End 2 (HHMM)

The time in 24-hour clock formats (HHMM) at which night service 2 is deactivated on the system.

Music On Hold Station

Select a station position to connect to an external music-on-hold source. The drop down menu displays all available station positions.

Weekend Service

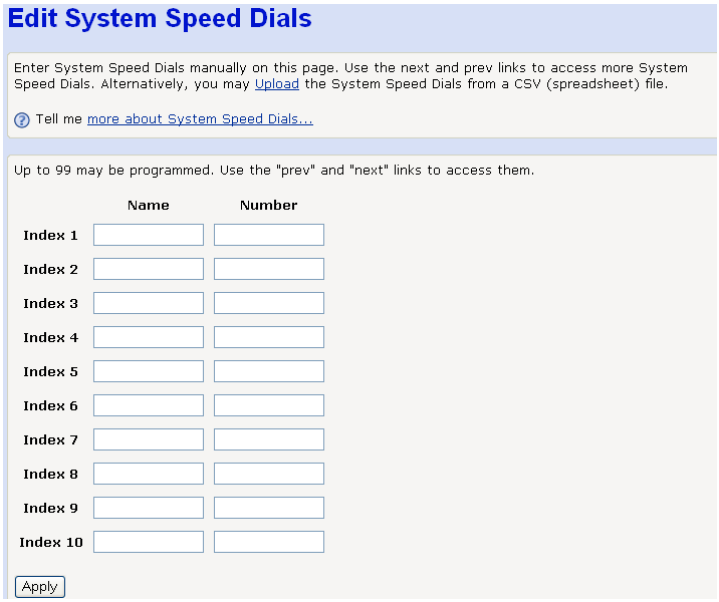
Weekend service is selectable as being ON or OFF. This renders the system operable in accordance with night service settings. To enable the option, select the relevant option. As long as the option is selected, the system will operate in accordance with night service programming parameters.

Automatic Line selection

When Automatic Line selection is turned on when an station goes off hook and dials a free line is selected and the digits are sent to line. Internal calls are made by selecting the internal call menu on keystations or by pressing Forward Recall and dialing the station number.

System Speed Dials

You can dial your System speed dials from the relevant option on your keystation menu or by dialing the appropriate short code access from any analog phone.


Edit System Speed Dials
Enter System Speed Dials manually on this page. Use the next and prev links to access more System Speed Dials. Alternatively, you may Upload the System Speed Dials from a CSV (spreadsheet) file.
Tell me more about System Speed Dials...
Up to 99 may be programmed. Use the "prev" and "next" links to access them.
Name
Number
Index 1
Index 2
Index 3
Index 4
Index 5
Index 6
Index 7
Index 8
Index 9
Index 10
Apply

This option allows the user to enter up to 99 System speed dial numbers, which will be available to all stations. The System speed dials are referred to as Index 1 – 99.
You may also associate a Name with each Speed Dial entry.

Name

Enter up to 10 characters in this field

Number

Enter up to 20 digits in this field

Note

To access the entries for Index 11 – 99, use the Next button on the bottom right hand corner of the Edit System Speed Dials page.

WARNING

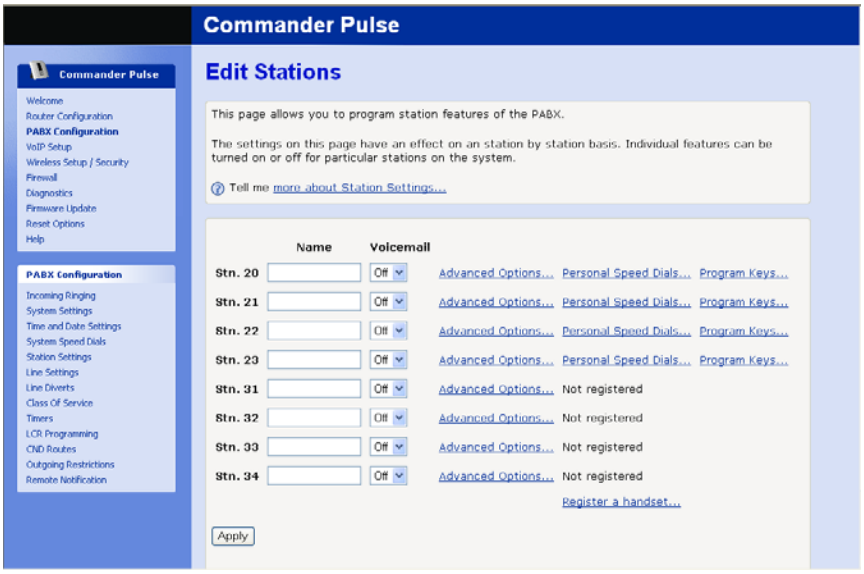
Make sure you select the APPLY button before proceeding to additional pages to complete more entries (e.g. Index 11 – 20), otherwise your changes might be lost.

Uploading System Speed Dials list

Alternatively, you may upload the System Speed Dials from a .CSV (spreadsheet) file.
To do this, click Upload on the Edit System Speed Dials page and follow the instructions.
The file must be in .CSV format, with names in the first column, and phone numbers in the second column.
You can export files in this format using typical spreadsheet software, e.g. Microsoft Excel

Station Settings

The settings on this page have an effect on an station by station basis. Individual features can be set or unset for particular stations on the system.



Basic Settings

Station Name

You may assign names to stations. When an station receives an internal call, its 'display' will show the calling station name in the place of the calling station number.
To set the station name, left mouse click on the field and enter the name associated with the station
A maximum of 10 characters per name can be entered.

Voicemail

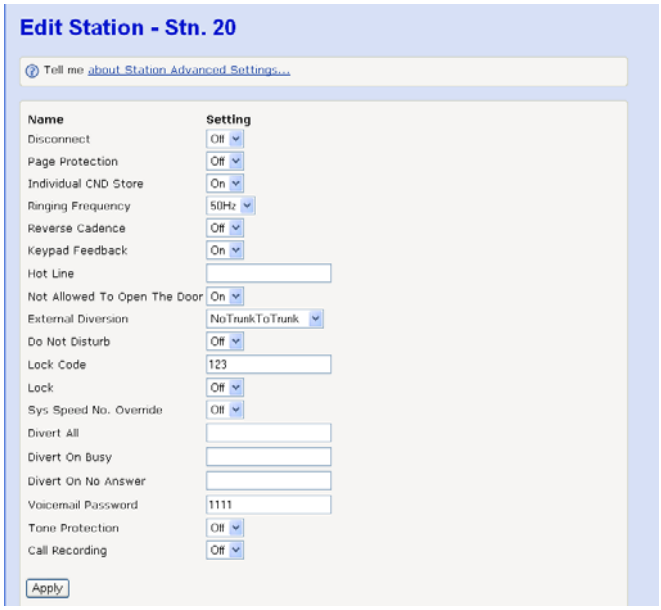
Use this setting to turn ON/OFF individual voicemail boxes for each station.

Advanced Options

Select this option to edit Advanced Options for individual stations.

Note

Advanced Options for the cordless stations contain only a subset of the below features, as some of the features are not relevant for cordless stations.



Disconnect

Use this option to functionally disconnected the station from the system (this option does not physically disconnect the station).

Page Protection

When selected the station in question will not receive pages from keystation 'Page-all' calls.

Individual CLI store

You can program each station to store five numbers each. Each of these stations will have a separate record of calls that ring on CO lines programmed to ring their stations only.

Ringing Frequency

This option allows the ringing frequency to be changed from the default 25Hz to 50 Hz on individual stations.

Reverse Cadence

Certain equipment connected to an station position (such as answering machines) may not ring correctly when an incoming call is received.
This option allows the user to alter the incoming ringing cadence (tempo) to facilitate such equipment.

Keypad confirmation

When Keypad confirmation is On a confirmation tone is heard when dialing from the keypad on the keystation.

Hot Line

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialed can be an station or an external number.

Left mouse click on the field and enter the hotline number associated with the station. This is a telephone number up to 24 digits in length.
The user can enter another station number, or an external number as required (include 9 to seize the outside line).

Not Allowed to Open the Door

The selected station cannot be used to open the door when a call is placed over the door station.

Forward All

Before you leave your station, you can Forward all your calls to ring at another station. Alternatively, you can Forward all external calls presented to your station to an external number.
This function can be set for all stations
Left mouse click on the data entry field for each station. Enter up to 24 digits in this field (include the trunk access digit of Forwarding to outside lines).

Note

Note: Station forwarding only applies to calls specifically to that station. So, or example, calls routed to the station as part of a general Incoming Ringing group will not be subjected to individual station level Forwards.

Forward when busy

The 'Forward when busy' feature allows you to Forward all your calls to ring at another station if your station is busy (engaged). Alternatively, you can Forward all external calls to an external number if your station is busy. In this case, internal calls will not be Forwarded but will be given the busy tone.
This function can be set for all stations

Forward on No Answer

The 'Forward On No Answer' allows you to Forward all your calls to ring at another station if there is no answer at your station after four rings. Alternatively, you can Forward all external calls to an external number if your station has not answered after four rings. In this case, internal calls will not be Forwarded but will continue to ring your station.
This function can be set for all stations

Left mouse click on the data entry field for each station. Enter up to 24 digits in this field (include the trunk access digit of Forwarding to outside lines).

External Forwarding

This option allows the administrator to enable or disable each station's facility to Forward calls to outside lines.
Selection range: Left mouse click on the field and a pull down list of options is displayed:

- No Trunk to Trunk (This setting means incoming external calls cannot be Forwarded back out on another external line)
- All Calls (Default: All call types (Internal & External) can be Forwarded)
- External Forward Only (This setting means that ONLY incoming external calls can be Forwarded externally)

WARNING

It is possible that a station may misuse the External Forward facility. The Default setting is that no station is allowed to set the facility.

Note

Broken tone will be heard at your station until all call forwarding is cancelled.

You cannot Forward to a station that has the 'Do Not Disturb' feature set.

Do Not Disturb

If your station is set to 'Do Not Disturb', anyone trying to call you will receive a busy (engaged) tone. If the person trying to contact you has a keystation, 'Do Not Disturb Enabled' will appear on its 'display'. 'Call Back' and 'Alarm call' are the only incoming ringing that will be accepted when this feature is set. Stations may be set not to ring.
This option cannot be set for station 20.

Lock Code

You use a Lock Password to lock, unlock, or to make calls from a locked station. The default Lock Password for all stations is 123, but each station may change its password. Station Lock Passwords can be examined from the Programming Station. The allowable range is a three-digit code in the range 000 to 999.

Lock

This feature allows you to lock your station to prevent unauthorized users from making external calls. Turn station lock ON or OFF.

Sys Sped Dial override

When this option is On stations can dial all the numbers in the system speed dial list even if they are normally restricted from dialing that number.

Voicemail Password

This is the password used to access individual station voicemail boxes. By default, each station is allocated the same Voicemail Password, (1111). You can enter your own password, which can be up to eight digits long, as follows:
The password can be up to 8 digits in length.

Tone Protection

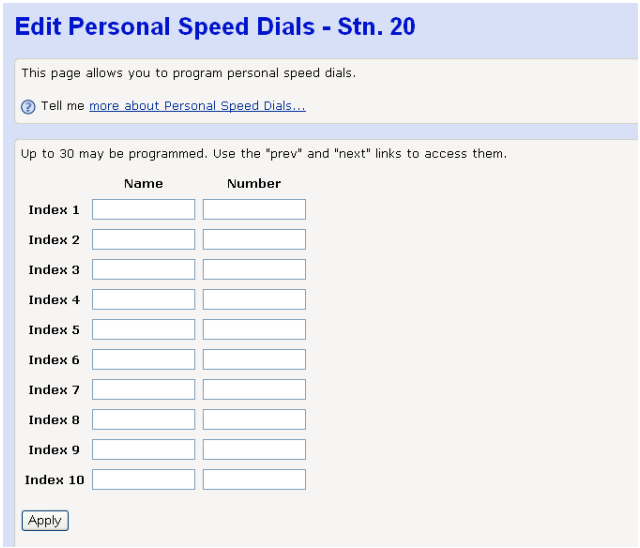
When on a call, the call waiting tone of conference tone is audible to the user. Where these tones are not required, the feature should be disabled.

Call Recording

This option allows the station to record calls. When set the option to record the call appears on the keystation display when they are on a call. The station must be allocated a voice mailbox for the feature to operate.

Personal Speed Dials

You can dial your personal speed dials from the relevant option on your keystation menu or by dialing the appropriate short code access from your analog phone.
This page allows the user to enter up to 30 personal speed dial numbers for each station. The personal speed dials are referred to as Index 1 – 30.



You may also associate a Name with each Speed Dial entry.

Name

Enter up to 10 characters in this field

Number

Enter up to 20 digits in this field.

Note

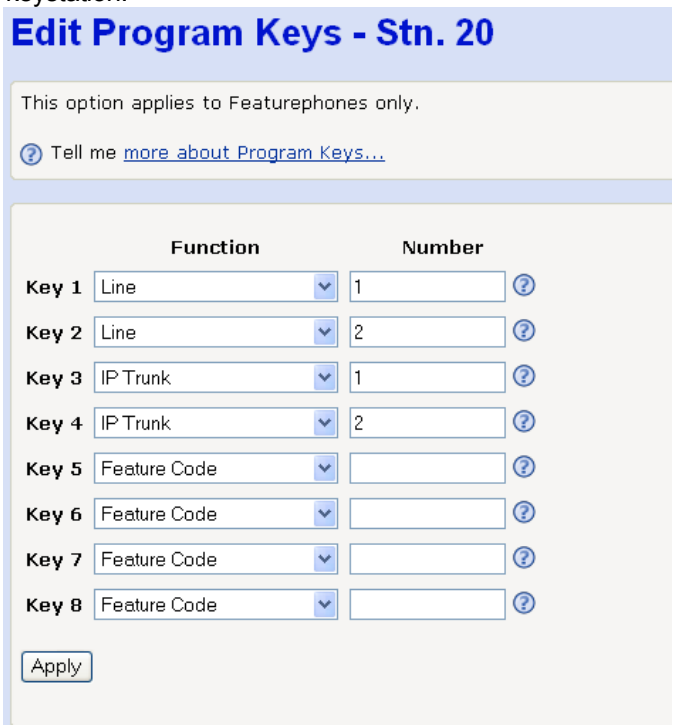
To access the entries for Index 11 – 30, use the Next *button on the bottom right hand corner of the Edit Personal Speed Dials page. You cannot Forward to a station that has the 'Do Not Disturb' feature set.*

WARNING

Make sure you select the APPLY button before proceeding to additional pages to complete more entries (e.g. Index 11 – 20), otherwise your changes might be lost.

Program Keys

This option applies to keystations only.
There are 8 programmable Function Keys on your system keystation.



In default mode, the keystation 'Program Keys' are programmed to select the external lines available on the system, the first key for Line 1 the second for Line 2 and so on.

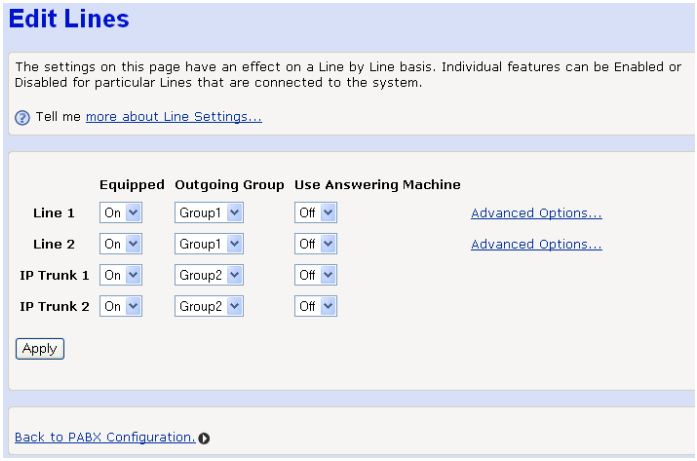
Using your mouse left click on the 'Function' menu option next to the Key you wish to program. From the drop down list available, select the required setting.

Note

Some settings require additional data to be entered. e.g. Selecting "Station" as the program function will require you to enter the actual station number (e.g. 21, 32 etc..) in the associated 'Number' field.

Line Settings

The settings on this page have an effect on a line by line basis. Individual features can be Enabled or Disabled for particular lines that are connected to the system.



Equipped

The system assumes that available line interfaces have external lines connected to them. If a line interface does not have an exchange line connected, ensure correct system operation by unequipping the line interface in system programming
Select this option to enable/disable lines connected to the system.
Setting the option to Off, disables the specified line.

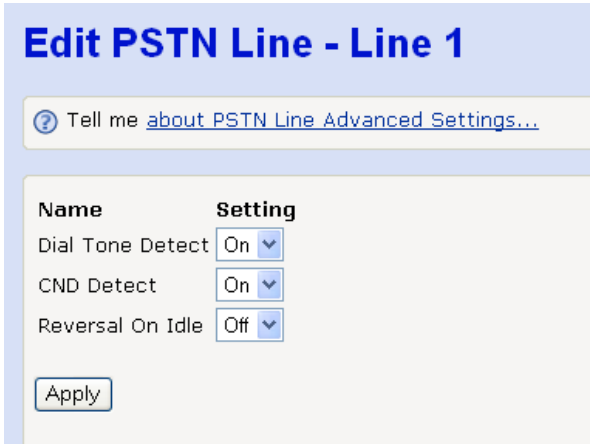
Outgoing Group

Lines can be grouped together in up to 2 Outgoing Groups. Each Outgoing Group is associated with a code. These codes are 0 and 8, with Group 1 being associated with 0, and Group 2 with 8.
Dialing a code selects a line from the associated Outgoing Group.
This option allows you to select the required Group for the selected line.

Use Answering Machine

This feature allows you to set up an answering machine to answer incoming calls. You can select which lines are to be answered by the answering machine when it is turned on.
All messages received are stored in the answering machine. You can use it if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the answering machine. The greeting may ask callers to dial a station number, in which case the call will be transferred through to that station.
Select this option to answer incoming calls on the line with the answering machine.

Advanced Options



Dial Tone Detect

This option requires the system to detect dial tone before calls can be made.
If set to Off, this feature prevents the system from dropping the line when dial tone has not been detected.
In this case, the line is released if no digit is dialed until the expiration of a timer.

CND Detect

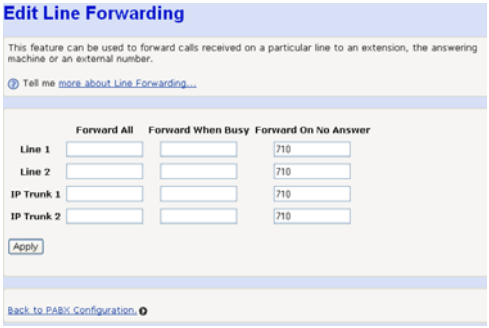
This option enables the system to detect incoming CND information received from the network and to display it on keystations

Reversal on Idle

His option detects when an external party clears down a call and clears the call from the Commander Pulse.

Line Forwarding

You can use this feature to Forward (On Busy, No Reply or All Calls) calls received on a particular line to a station or an answering machine.


Edit Line Forwarding
This feature can be used to forward calls received on a particular line to an extension, the answering machine or an external number.
Tell me more about Line Forwarding...
Forward All
Forward When Busy
Forward On No Answer
Line 1
Line 2
IP Trunk 1
IP Trunk 2
710
Apply
Back to PABX Configuration

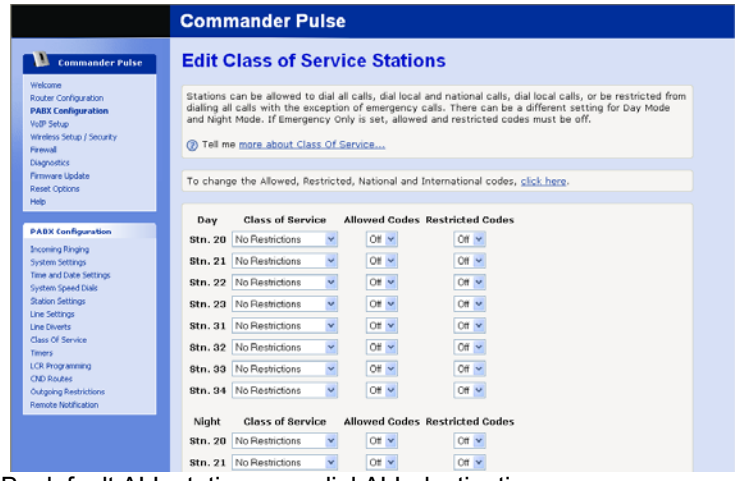
Because station level forwarding only applies for calls dialed to specific station, this feature allows you to control how to forward calls which are received on particular lines and are not destined for a particular station using CND routing.
This feature also solves the issues of which station's forwarding setting would take precedence in the event of an incoming call ringing multiple stations with different Forwarding options defined.

For each incoming line (Line 1 and 2, IP Trunk 1 & 2) you can define what number to forward the call to for the cases of No Reply, Busy & All Calls.
(See also PABX Configuration -> Station Settings -> Advanced Options)

Class of Service

The Class of Service feature allows the user to define restriction settings for each station connected to the system prohibiting the station from making certain types of call.
The following restrictions can be defined per station:

- No Restrictions i.e. All calls are allowed
- Restrict International i.e. Prevent the station from dialing calls beginning with the codes you enter in the International table
- Local Only i.e. Prevent the station from dialing codes you enter in the International AND National tables
- Emergency Calls Only i.e. The station can only dial 000 and 106. All other codes are restricted

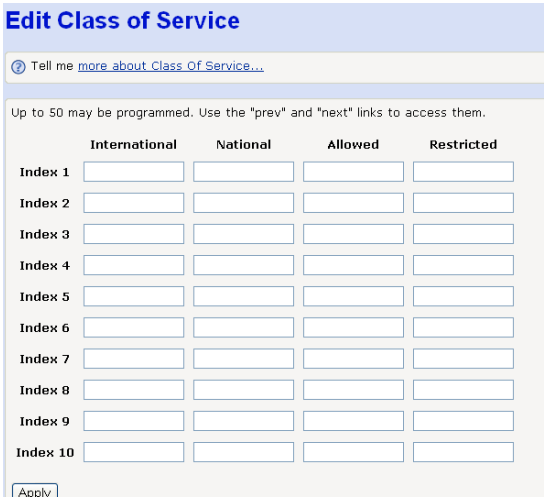

Commander Pulse
Edit Class of Service Stations
Stations can be allowed to dial all calls, dial local and national calls, dial local calls, or be restricted from dialling all calls with the exception of emergency calls. There can be a different setting for Day Mode and Night Mode. If Emergency Only is set, allowed and restricted codes must be off.
Tell me more about Class Of Service...
To change the Allowed, Restricted, National and International codes, click here.
Day Class of Service Allowed Codes Restricted Codes
Stn. 20 No Restrictions Off Off
Stn. 21 No Restrictions Off Off
Stn. 22 No Restrictions Off Off
Stn. 23 No Restrictions Off Off
Stn. 31 No Restrictions Off Off
Stn. 32 No Restrictions Off Off
Stn. 33 No Restrictions Off Off
Stn. 34 No Restrictions Off Off
Night Class of Service Allowed Codes Restricted Codes
Stn. 20 No Restrictions Off Off
Stn. 21 No Restrictions Off Off

By default ALL stations can dial ALL destinations.
Select the required setting for each station from the relevant drop-down box.
By default ALL stations can dial ALL numbers.

The Allowed and Restricted Codes

The Allowed & Restricted codes can be used to add greater flexibility to how you can configure the settings.
For example, if you wanted to restrict all International calls, except those to the UK (international code 001144...). In this case place the station in *Restrict International* in the Class of Service settings, and then set Allowed Codes to ON for the station in question.
In the International table enter 0011 in Index 1 and in the Allowed Codes list enter the dialing code for the UK (001144). These settings allow the caller to dial 001144 but restricts all other 0011 codes.

Similarly if you want restrict particular numbers enter them in the Restricted Codes list and set the Restricted Codes to on for the station.



Note

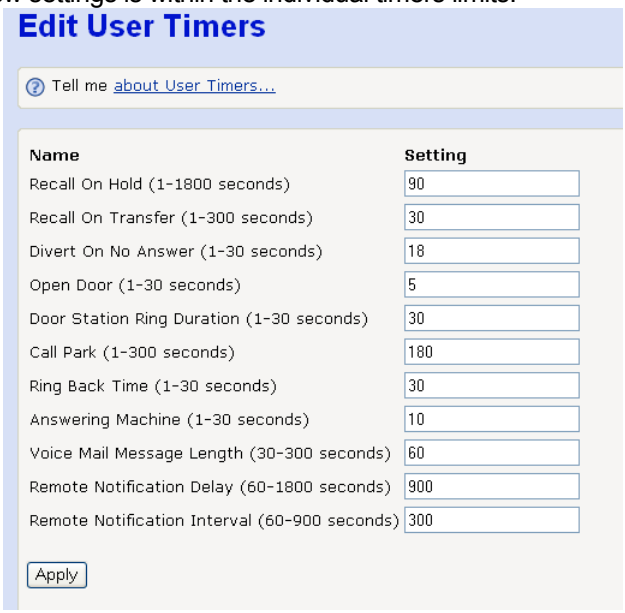
If 'Emergency Only' is set, Allowed and Restricted codes have no effect.

Day and Night Mode

There are different settings for Day Mode and Night Mode. To configure Day/Night mode see *PABX Configuration -> System Settings*.

Timers

The timers listed below are under the control of the user and therefore can be changed from the default setting, provided the new settings is within the individual timers limits.



Recall On Hold

This is the time that elapses before a call, which has been placed on hold, rings back the station that put the call on hold.

Recall On Transfer

This is the time that elapses before a call, which has been transferred and not answered, rings back the station that attempted the transfer.

Forward On No Answer

This is the time that elapses before a call ringing at an station, with 'Forward On No Answer' set, is forwarded.

External Forward

This sets the time in minutes before an externally forwarded or transferred call is automatically cleared down.

Open Door

This is the time that the Doorstrike relay will remain open following activation.

Door station Ring Duration

This is the time that stations will ring when the Door station is pressed.

Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call station.

Ring Back Time

This is the time an station will ring when Ringback has been invoked.

Answering Machine

This is the time that elapses before an unanswered incoming call is presented with the System voice mailbox greeting.

Voice Mail Message Length

This is the maximum length of a message left in a Mailbox or a Greeting for a Mailbox, Auto Attendant or Courtesy service.

Remote Notification Delay

This is the delay between receiving a message in a voice mailbox and setting up the remote notification call.

Remote notification Interval

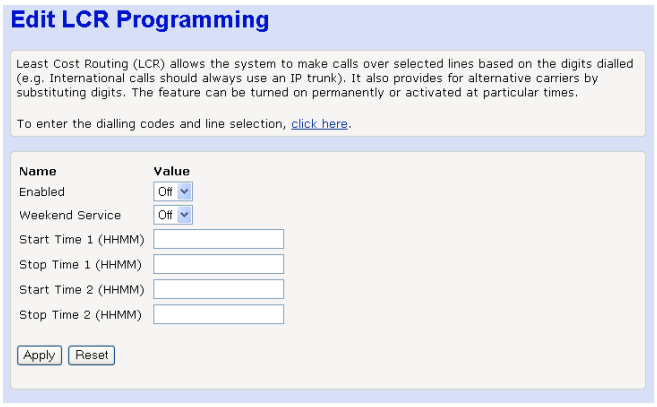
This is the interval before setting up a second call if the first one was unsuccessful.

LCR Programming

This feature can be used to ensure that certain calls are routed over specific lines, or over a specific network provider, typically to take advantage of optimal call charges for specific call types.

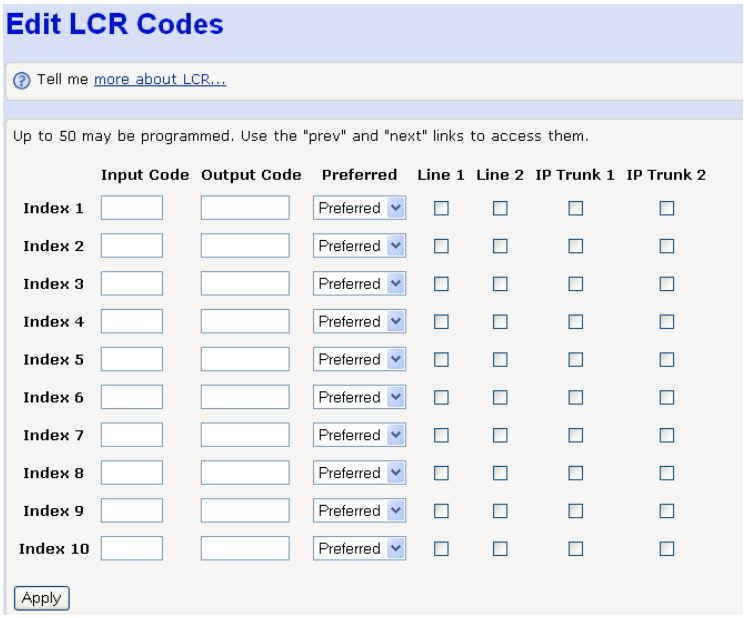
Edit LCR Programming

To set up the feature you associate dialed digits (Input Codes) with the lines over which calls should be routed and with whatever network codes (Output codes) are necessary to route the call.
For example, if you wished all International (Input code = '0011') to be routed over Line 1, then you would associate Input Code '0011' with Line 1
In addition, you may choose to route the calls over different lines at various times of the day for optimum call rates.
The feature can be turned on permanently or activated at particular times.
Once the facility is activated, calls are automatically routed over the selected lines, and the network code (Output Code) is dialed automatically on the line before the telephone number.
Use this Edit LCR Programming Page to Enable/Disable LCR service and to set Start Times & Stop Times for service activation.
To configure additional LCR parameters, see 'To enter the dialing codes and line selection, click here.' on the Edit LCR Programming page.


Edit LCR Programming
Least Cost Routing (LCR) allows the system to make calls over selected lines based on the digits dialled (e.g. International calls should always use an IP trunk). It also provides for alternative carriers by substituting digits. The feature can be turned on permanently or activated at particular times.
To enter the dialling codes and line selection, click here.
Name
Value
Enabled
Off
Weekend Service
Off
Start Time 1 (HHMM)
Stop Time 1 (HHMM)
Start Time 2 (HHMM)
Stop Time 2 (HHMM)
Apply
Reset

Edit LCR Codes

Using this page you may define the Least Cost Routing criteria. Up to 50 LCR rules may be defined (Index 1 – 50).
In the 'Input Code' field you insert the relevant dialed digits (e.g. '0011' for International calls or '0011' for International calls to the USA).
In the Output Code field, you insert whatever digits you want to be passed to the network. If no additional carrier access codes are required, then the Output Code is the same as the Input Code.



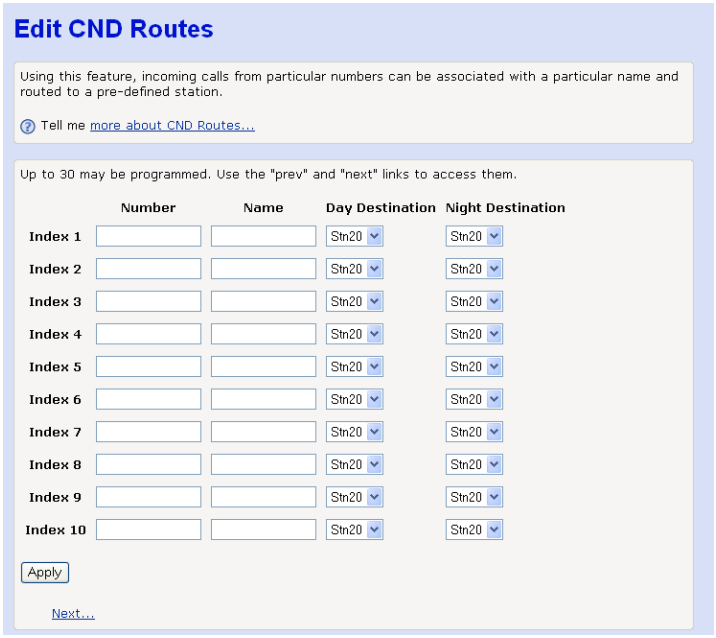
If you require to enter an network operator specific access code enter this before the relevant dialed digits in the 'Output Code' field. The 'Output Code' entered will be dialed automatically by the system on front of the user dialed digits.

Preferred / Exclusive

In Preferred is selected then the system will, as a preference, route the call using the line(s) which have been enabled for each specific Input Code. However, if these line(s) are busy or not-available, then the system will attempt to route the call over any of the remaining system lines (i.e. those which are not enabled for that specific Input code). If Exclusive is selected then calls will only be dialled over the chosen lines.

CLI Routes

Using this feature, incoming calls from particular numbers can be associated with a particular name and routed to a pre-defined station.



In the number field, enter the callers number (CLI) as is delivered by the network. You may choose to associate a name with this number.
Select the station to be rung when this number is detected.. Options for Day & Night routing exist. To set the system Day & Night mode times see PABX Configuration -> System Settings.
Up to 30 individual entries can be made, referred to as Index 1-30. To access the entries for Index 11 – 30, use the *Next* button.

Note

If no name is entered for the incoming CLI, the system will compare the incoming CLI against the speed dial list to match for a name.

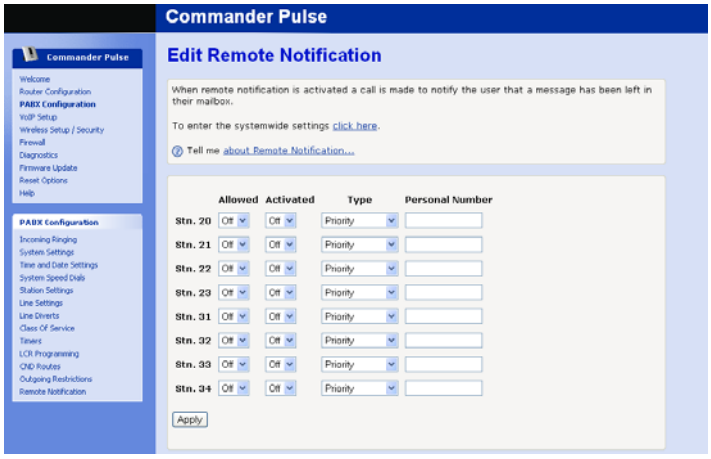
Outgoing Restriction

Use can use this feature to restrict a station from being able to make outgoing (external) calls on particular lines
Configure the restriction for each line separately, i.e.
Turn OFF for those stations that are not allowed to select the particular line to make outgoing calls.

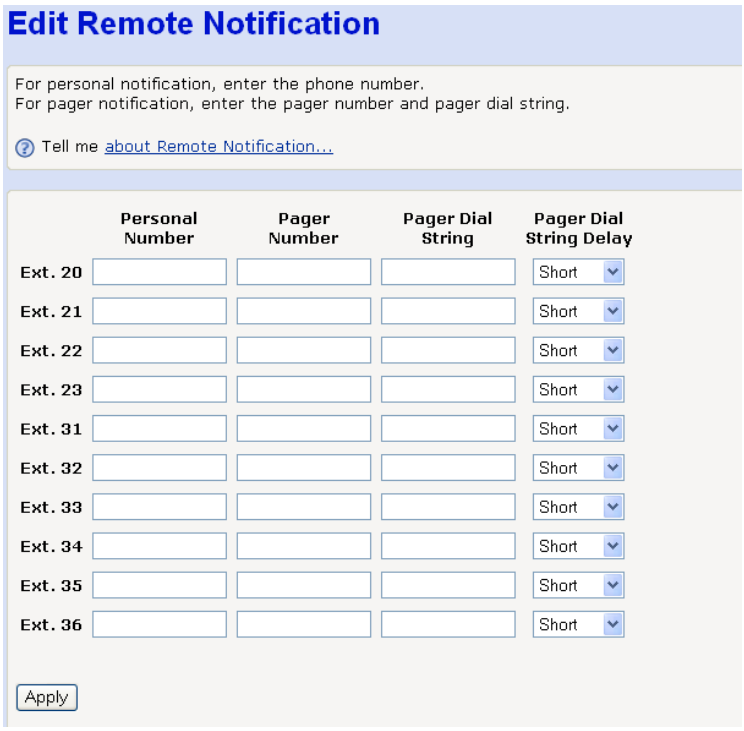
Edit Outgoing Restrictions
This feature is used to restrict individual stations from being able to make outgoing (external) calls on particular lines.
Tell me more about Outgoing Restrictions...
Stn. 20 Stn. 21 Stn. 22 Stn. 23 Stn. 31 Stn. 32 Stn. 33 Stn. 34
Line 1
Line 2
IP Trunk 1
IP Trunk 2
Off
Apply

Remote Notification

The various settings for remote notification of voice mail messages are set here.

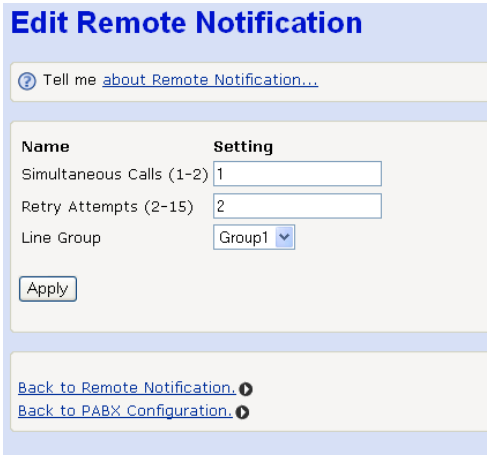


Set *'Allowed'* on for those stations allowed to activate remote notification.
When *'Activated'* is set to On the remote notification is activated for the station. The station can activate and deactivate the feature from within their own voice mailbox.
The notification type can be set to all messages or priority messages only. The user can also set this from within their voice mailbox.
Select *'To enter additional Remote Notification settings click here'*



Enter the personal number if remote notification is to a telephone number
Enter the Pager Company number and the Pager dial string if notification is to a pager company
Also three delays are provided between the call to the Pager Company being answered and the pager string being dialed. This is set at a short delay.

There are a number of systemwide settings which cannot be set by individual stations. These are accessed by selecting '*To enter the systemwide settings, click here*'



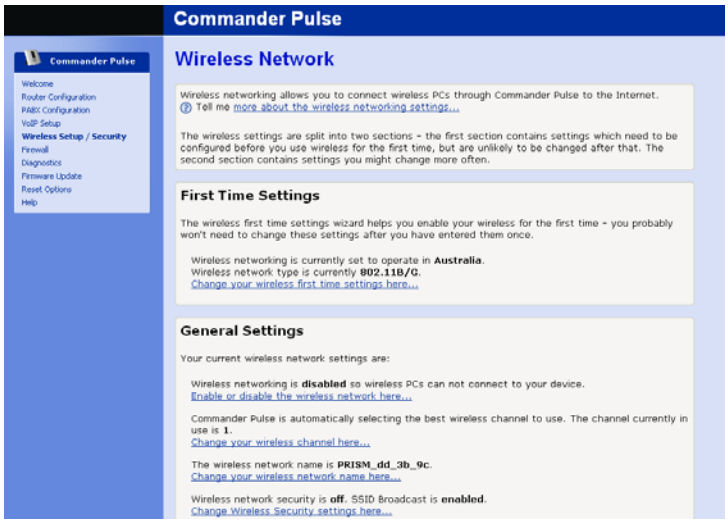
The number of simultaneous calls determines the number of remote notification calls that will be set up at the same time.
The number of retry attempts sets the number of times the system will try to set up a call if it is not successful
The line group selects the lines that will be used for the calls.

8 Advanced Router Settings

Wireless Setup / Security

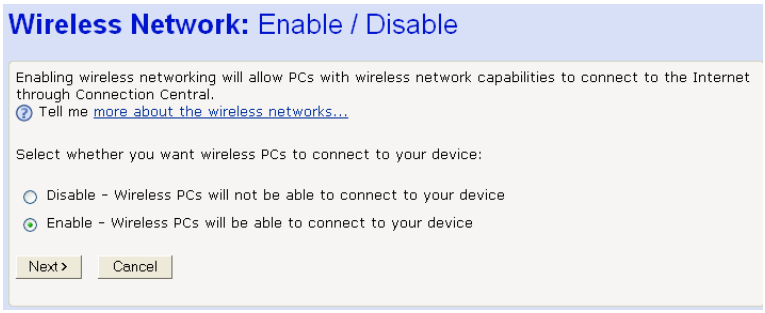
This chapter assumes PCs are already equipped with a wireless card.
The *Wireless Network* page allows you to configure the Wireless features of your Commander Pulse.

1. From the left-hand *Setup* menu, click on *Wireless Setup / Security*. The following page is displayed:


Commander Pulse
Commander Pulse
Welcome
Router Configuration
PABX Configuration
VoIP Setup
Wireless Setup / Security
Firewall
Diagnostics
Firmware Update
Reset Options
Help
Wireless Network
Wireless networking allows you to connect wireless PCs through Commander Pulse to the Internet.
Tell me more about the wireless networking settings...
The wireless settings are split into two sections - the first section contains settings which need to be configured before you use wireless for the first time, but are unlikely to be changed after that. The second section contains settings you might change more often.
First Time Settings
The wireless first time settings wizard helps you enable your wireless for the first time - you probably won't need to change these settings after you have entered them once.
Wireless networking is currently set to operate in Australia.
Wireless network type is currently 802.11B/G.
Change your wireless first time settings here...
General Settings
Your current wireless network settings are:
Wireless networking is disabled so wireless PCs can not connect to your device.
Enable or disable the wireless network here...
Commander Pulse is automatically selecting the best wireless channel to use. The channel currently in use is 1.
Change your wireless channel here...
The wireless network name is PRISM_dd_3b_9c.
Change your wireless network name here...
Wireless network security is off. SSID Broadcast is enabled.
Change Wireless Security settings here...

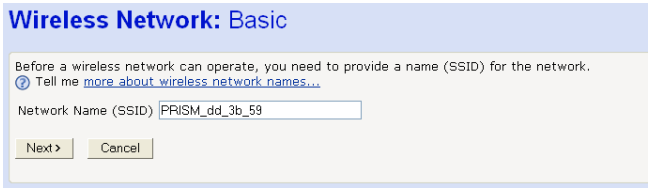
To enable the wireless network

2. Select Enable or disable the wireless network here... in the General Settings


Wireless Network: Enable / Disable
Enabling wireless networking will allow PCs with wireless network capabilities to connect to the Internet through Connection Central.
Tell me more about the wireless networks...
Select whether you want wireless PCs to connect to your device:
Disable - Wireless PCs will not be able to connect to your device
Enable - Wireless PCs will be able to connect to your device
Next >
Cancel

3. Select *Enable* and *Next.*

The following page showing the Wireless Network name is displayed


Wireless Network: Basic
Before a wireless network can operate, you need to provide a name (SSID) for the network.
Tell me more about wireless network names...
Network Name (SSID) PRISM_dd_3b_59
Next >
Cancel

Your Commander Pulse and all of the wireless PCs in your wireless LAN share the same wireless network name. This name (commonly known as the *Service Set Identifier (SSID)*) distinguishes your Wireless network from any other(s) that may be in use nearby. It also ensures that only those PCs configured with the same name as the one set on your Commander Pulse can obtain access to it.
For security reasons, we recommend that you replace the default network name with a unique value of your own.
To do this:

4. Click in the *Network Name (SSID)* box and type a new name. The name can be any combination of numbers and/or letters with a maximum length of 32 characters.
5. Click *Next>*.

The next page in the wizard sequence is displayed, which allows you to Select a Channel.

Wireless Network: Channel Selection
You may either choose a channel yourself, or allow Connection Central to automatically select the best channel.
Tell me more about wireless channels...
Allow Connection Central to select channel
Select a channel manually
Next >
Cancel

Your Commander Pulse and all of the wireless PCs in your wireless LAN must share the same channel number. Each channel represents a regulatory channel frequency (MHz). Some countries may regulate the use of certain channel frequencies. Your ISP determines which channels are available and whether you should allow automatic or manual channel selection.
To configure channel selection, choose one of the following options:

6. If you want the Commander Pulse to automatically select the best channel for your network, click on the Allow Commander Pulse to select channel option and then click Next>.
7. If you want to manually select a channel, click on the Select a channel manually option and then click Next>. The following page is displayed:

Select a suitable channel (as advised by your ISP) from the *Channel* drop-down list and then click *Next>.*

Wireless Network: Channel Selection
Select the channel you wish the wireless network to use.
Tell me more about wireless network channels...
Channel 7
Next >
Cancel

Configure Wireless Network Security

The following page allows you to configure wireless security:

Wireless Network: Security
You can encrypt wireless network data transmissions using wireless network security. Select an encryption option from the list below.
Tell me more about wireless network security...
Off - no encryption on the wireless network
64bit encryption on the wireless network
128bit encryption on the wireless network
Wi-Fi Protected Access (WPA) on the wireless network
Enable SSID Broadcast:
Next >
Cancel

You can protect your wireless data from potential *eavesdroppers* by encrypting wireless data transmissions. An eavesdropper might set up a compatible wireless adapter within range of your Commander Pulse and attempt to access your network. Data encryption is the translation of data into a form that cannot be easily understood by unauthorized users. There are two methods of wireless security to choose from:

- Wired Equivalent Privacy (WEP); data is encrypted into blocks of either 64 bits length or 128 bits length. The encrypted data can only be sent and received by users with access to a private network key. Each PC on your wireless network must be manually configured with the same key as your Commander Pulse in order to allow wireless encrypted data transmissions. Eavesdroppers cannot access your network if they do not know your private key. WEP is considered to be a low security option.

- Wi-Fi Protected Access (WPA); provides a stronger data encryption method (called Temporal Key Integrity Protocol (TKIP)). It runs in a special, easy-to-set-up home mode called Pre-Shared Key (PSK) that allows you to manually enter a pass phrase on all the Commander Pulses in your wireless network. WPA data encryption is based on a WPA master key. The master key is derived from the pass phrase and the network name (SSID) of the Commander Pulse.

To configure security, choose one of the following options:

- If you do not want to use Wireless Network security, click the Off radio button and then click Next>. Off is the default setting, but you are strongly recommended to use wireless network security on your Commander Pulse.

- If you are following the First Time Settings wizard, the next page in the wizard sequence is displayed, which allows you to Configure Wireless Address Authentication.

- If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

- If you want to use WEP 64bit data encryption, click on the 64bit encryption on the wireless network radio button and then click Next>. Now follow the instructions in Configuring 64bit or 128bit encryption on page 123.

- If you want to use WEP 128bit data encryption, click on the 128bit encryption on the wireless network radio button and then click Next>. Now follow the instructions in Configuring 64bit or 128bit encryption on page 123.

- If you want to use WPA, click on the Wi-Fi Protected Access (WPA) on the wireless network radio button and then click Next>. Now follow the instructions in Configuring WPA security on page 124.

Disabling the Broadcast of the SSID Network Identifier

For additional security you can disable the broadcast of the Network Identifier, SSID. Unticking the *Enable SSID Broadcast* button on the Wireless security page does this. To connect to a network that is not broadcasting the SSID it is necessary to enter the SSID manually in the network connection properties in the Control panel of your PC.

Configuring 64bit or 128bit encryption

The example set in this section is for 128bit encryption, however the outline also applies to 64bit encryption.

1. Once you have selected your WEP encryption method and then clicked *Next>,* the following page is displayed:
2. Click in the *Key* box and type a unique 26-character

Wireless Network: 128bit Network Key
You must provide a 26 character hex network key for 128bit encryption. A hex key is made of the letters A to F and numbers 0 to 9.
Tell me more about Wireless network keys...
Key
Next >
Cancel

hex network key, such as *A6F34B2CE5D68BE90A6F34B2CE*.

Note

Hexadecimal or 'hex' numbers each have a value of 0 to 9 or A to F. Each number represents four bits of binary data.

Note

If you selected 64bit, you will need to type a unique 10-character hex network key.

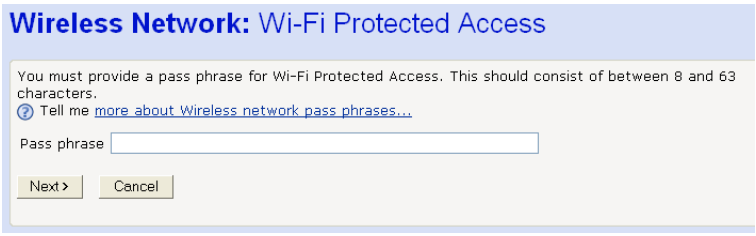
3. Click *Next>.*

If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Configure Wireless Address Authentication*

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Configuring WPA security

Once you have selected WPA and then clicked *Next>,* the following page is displayed:


Wireless Network: Wi-Fi Protected Access
You must provide a pass phrase for Wi-Fi Protected Access. This should consist of between 8 and 63 characters.
Tell me more about Wireless network pass phrases...
Pass phrase
Next >
Cancel

1. Type a unique pass phrase in the Pass phrase text box. Your pass phrase should be at least 20 characters long in order to deter potential intruders.
2. Once you have typed a pass phrase, click *Next>*.
3. If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to Configure Wireless Address Authentication.

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

WARNING

It is strongly recommended that you enable Wireless Security to help protect your wireless network from unauthorized access.

Select a Channel

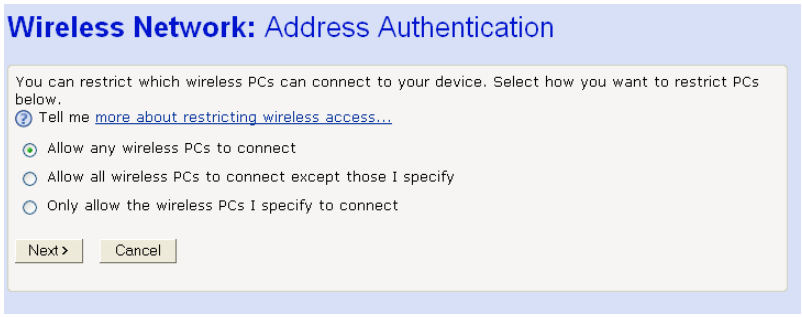
The following page allows you to select a network channel:

Wireless Network: Channel Selection
You may either choose a channel yourself, or allow Connection Central to automatically select the best channel.
Tell me more about wireless channels...
Allow Connection Central to select channel
Select a channel manually
Next >
Cancel

The next page in the wizard sequence is displayed, which allows you to Configure Wireless Network Security.
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Configure Wireless Address Authentication

The following page allows you to configure which wireless PCs can access the Commander Pulse:


Wireless Network: Address Authentication
You can restrict which wireless PCs can connect to your device. Select how you want to restrict PCs below.
Tell me more about restricting wireless access...
Allow any wireless PCs to connect
Allow all wireless PCs to connect except those I specify
Only allow the wireless PCs I specify to connect
Next >
Cancel

By default, any wireless PC that is configured with your network's SSID and channel number can connect to your Commander Pulse. You may want to increase the security of your wireless network by creating one of the following lists of wireless PCs:

A wireless PC blacklist; PCs on this list **cannot** access the Commander Pulse, but all other wireless PCs **can**.

A wireless PC whitelist; PCs on this list **can** access the Commander Pulse, but all other wireless PCs **cannot**.

The Wireless PCs added to either list are identified by their unique MAC address. This is made up of six pairs of characters, with each character either a number between 0 and 9, or a letter between A and F. For example, *00:20:2b:80:2f:30*.

To configure which wireless PCs can access your Commander Pulse, choose one of the following options:

- If you want any wireless PCs to have access to your Commander Pulse, click on the *Allow any wireless PCs to connect* radio button. Click *Next*>.
- If you are following the First Time Settings wizard, the final page in the wizard sequence is displayed, which allows you to Confirm Wireless network changes

If you have accessed this page from the General Settings section of the Wireless Network page, click on the Confirm changes button to apply changes and return to the Wireless Network page.

If you want to create a blacklist of PCs that cannot access your Commander Pulse, click on the Allow all wireless PCs to connect except those I specify radio button and then click Next>. Now follow the instructions in *Configuring the wireless PC blacklist* on page 126.

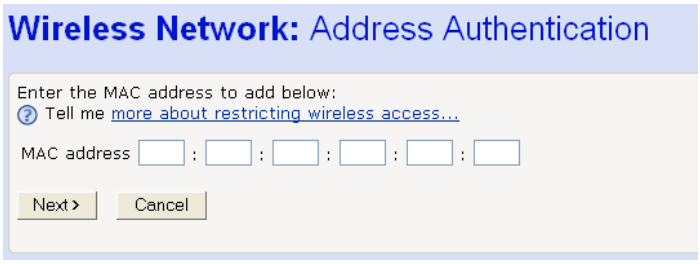
If you want to create a whitelist of PCs that can access your Commander Pulse, click on the Only allow the wireless PCs I specify to connect radio button and then click Next>. Now follow the instructions in Configuring the wireless PC whitelist on page 127.

Configuring the wireless PC blacklist

1. Once you have selected *Allow all wireless PCs to connect except those I specify* radio button and then clicked *Next>,* the following page is displayed:

Wireless Network: Address Authentication
You can configure the list of addresses to deny access to your device below.
Tell me more about restricting wireless access...
No addresses have been set.
Add an address here...
Next >
Cancel

2. To add a network PC to the blacklist, click Add an address here… The following page is displayed:



3. Click in each box and type each character pair of the MAC address for the PC you want to blacklist. Click *Next>.* The following page is displayed, containing details of the MAC address that you have just added:

Wireless Network: Address Authentication
You can configure the list of addresses to deny access to your device below.
Tell me more about restricting wireless access...
10:a2:d4:24:9f:3b
Add an address here...
Remove an address here...
Next >
Cancel

This page allows you to configure the addresses on the blacklist:

4. If you want to add another MAC address to the blacklist, click “Add” an address here… and repeat the instructions described in step 3.
5. If you want to remove a MAC address from the blacklist, click “Remove” an address here… At the displayed page, select the MAC address that you want to remove from the drop-down list.
6. Click *Next>.*

If you are following the *First Time Settings* wizard, the final page in the wizard sequence is displayed, which allows you to Confirm Wireless network changes
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Configuring the wireless PC whitelist

1. Once you have selected *Only allow the wireless PCs I specify to connect* radio button and then clicked *Next>,* the following page is displayed:

Wireless Network: Address Authentication
You can configure the list of addresses to allow access to your device below.
Tell me more about restricting wireless access...
No addresses have been set.
Add an address here...
Next >
Cancel

2. To add a network PC to the whitelist, click *Add an address here…* The following page is displayed:

3. Click in each box and type each character pair of the MAC address for the PC you want to whitelist. Click *Next>.* The following page is displayed, containing details of the MAC address that you have just added:

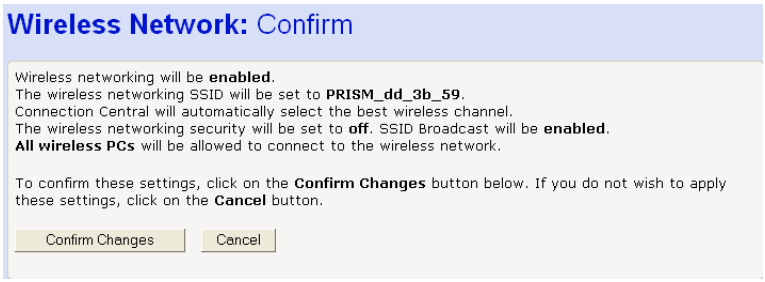
Wireless Network: Address Authentication
You can configure the list of addresses to deny access to your device below.
Tell me more about restricting wireless access...
10:a2:d4:24:9f:3b
Add an address here...
Remove an address here...
Next >
Cancel

4. This page allows you to configure the addresses on the whitelist:
5. If you want to add another MAC address to the whitelist, click Add an address here… and repeat the instructions described in step 3.
6. If you want to remove a MAC address from the whitelist, click Remove an address here… At the displayed page, select the MAC address that you want to remove from the drop-down list.
7. Click Next>.

If you are following the *First Time Settings* wizard, the final page in the wizard sequence is displayed, which allows you to Confirm Wireless network changes.
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Confirm Wireless network changes

Once you have configured Wireless Address Authentication and clicked on *Next>,* the following page is displayed:


Wireless Network: Confirm
Wireless networking will be enabled.
The wireless networking SSID will be set to PRISM_dd_3b_59.
Connection Central will automatically select the best wireless channel.
The wireless networking security will be set to off. SSID Broadcast will be enabled.
All wireless PCs will be allowed to connect to the wireless network.
To confirm these settings, click on the Confirm Changes button below. If you do not wish to apply these settings, click on the Cancel button.
Confirm Changes
Cancel

This page confirms the configuration changes made to each page in the wizard. If you are happy with these settings, click on the *Confirm Changes* button. Configuration changes are applied to the Commander Pulse and the *Wireless Network* page is displayed.
Once you have completed the *First Time Settings* wizard, you can edit specific wireless settings using the hyperlinks displayed in the *General Settings* section of the *Wireless Network* page.

Wireless Network First Time Settings Wizard

This section describes how to follow the wireless network wizard in order to configure your wireless network settings for the first time. The wizard sequence allows you to configure each of the following Wireless settings in order:

- The country that your network is operating in
- The specification standard used by the wireless network
- The wireless network name
- The wireless network channel
- Wireless network security
- Wireless network address authentication

Note

Each page of the wizard contains a Cancel *button. Click on this if you want to exit the wizard at any time.*

Setting the Country

1. From the *First Time Settings* section of the *Wireless Network* page, click *Change your wireless first time settings here…* The first page of the wizard is displayed:

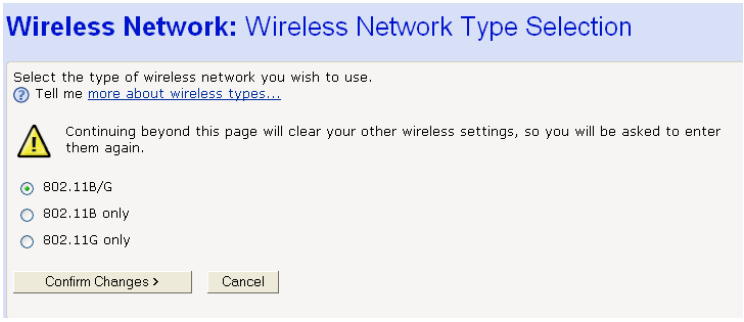
Wireless Network: Set Country
To make sure Connection Central does not transmit on illegal frequencies, you must set where you are in the world.
Tell me more about setting a country...
Continuing beyond this page will clear your other wireless settings, so you will be asked to enter them again.
Country USA
Confirm Changes >
Cancel

The number of valid wireless network frequencies varies from country to country and you need to identify which country you are operating the Commander Pulse in to ensure that your network will transmit on the correct frequency. The setting for the Australia is the default setting so you do not need to change it.

From the *Country* drop-down list, select the appropriate country. Click on the *Confirm Changes*> button to apply configuration changes and move on to the next page in the wizard sequence, which allows you to *Select your Wireless Network Type*.

Select your Wireless Network Type

The following page allows you to select the Institute of Electrical and Electronics Engineers (IEEE) specification supported by your network:


Wireless Network: Wireless Network Type Selection
Select the type of wireless network you wish to use.
Tell me more about wireless types...
Continuing beyond this page will clear your other wireless settings, so you will be asked to enter them again.
802.11B/G
802.11B only
802.11G only
Confirm Changes >
Cancel

Each specification transmits at a certain speed (measured in Mbits per second) over a specific frequency. The frequency indicates the range at which wireless traffic can be transmitted or received between the Commander Pulse and the wireless PC(s).
Supported specifications are:

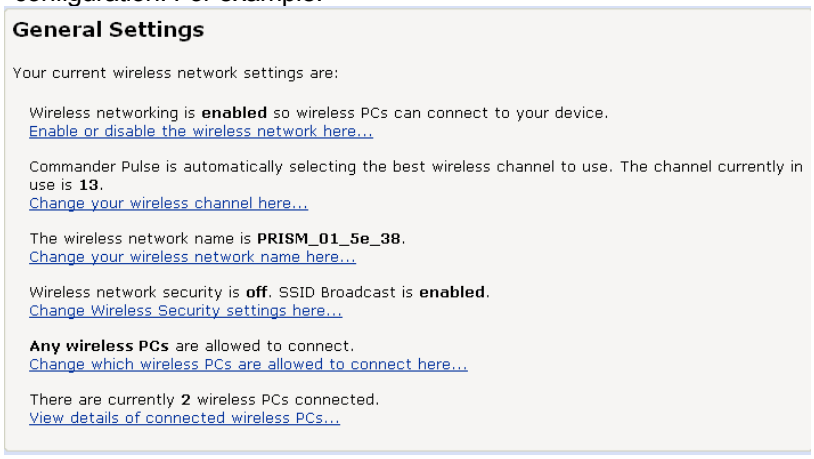
- 802.11B only – provides slower rates at a longer range than 802.11G (11 Mbps in the 2.4 GHz band)
- 802.11G only – provides faster rates at a shorter range than 802.11B (20+ Mbps in the 2.4 GHz band)
- 802.11B/G – supports both of the above specifications, but 802.11G rates will be slower than they are in a G-only network

To select a network type, click on a single radio button.

Click on the *Confirm Changes*> button to apply the configuration changes.

Wireless Network General Settings

The *General Settings* section of the *Wireless Network* page displays details of the Commander Pulse's current wireless configuration. For example:


General Settings
Your current wireless network settings are:
Wireless networking is enabled so wireless PCs can connect to your device.
Enable or disable the wireless network here...
Commander Pulse is automatically selecting the best wireless channel to use. The channel currently in use is 13.
Change your wireless channel here...
The wireless network name is PRISM_01_5e_38.
Change your wireless network name here...
Wireless network security is off. SSID Broadcast is enabled.
Change Wireless Security settings here...
Any wireless PCs are allowed to connect.
Change which wireless PCs are allowed to connect here...
There are currently 2 wireless PCs connected.
View details of connected wireless PCs...

The hyperlinks in this section allow you to:

Enable/disable wireless networking; see page 118.

Change the channel currently in use; click Change your wireless channel here… and follow the instructions in Select a Channel on page 124.

Change the network name (SSID); click *Change your wireless network name here* and follow the instructions on page 118.

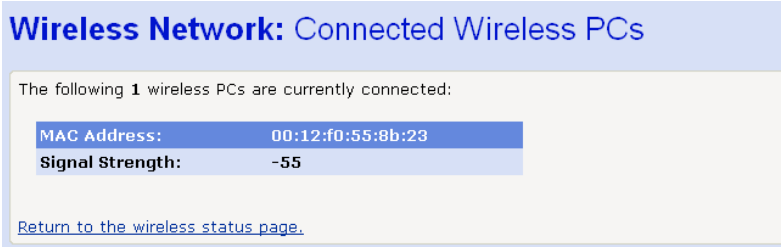
Configure wireless security; click *Change Wireless Security settings here*… and follow the instruction on page 120.

Configure address authentication; click *Change which wireless PCs are allowed to connect here*… and follow the instructions in Configure Wireless Address Authentication on page 125.

To display the information about the wireless PCs connected to the Commander Pulse; see Displaying details of Wireless PCs on page 131.

Displaying details of Wireless PCs

At the *Wireless Network* page, click on *View details of connected wireless PCs…* The following page is displayed:

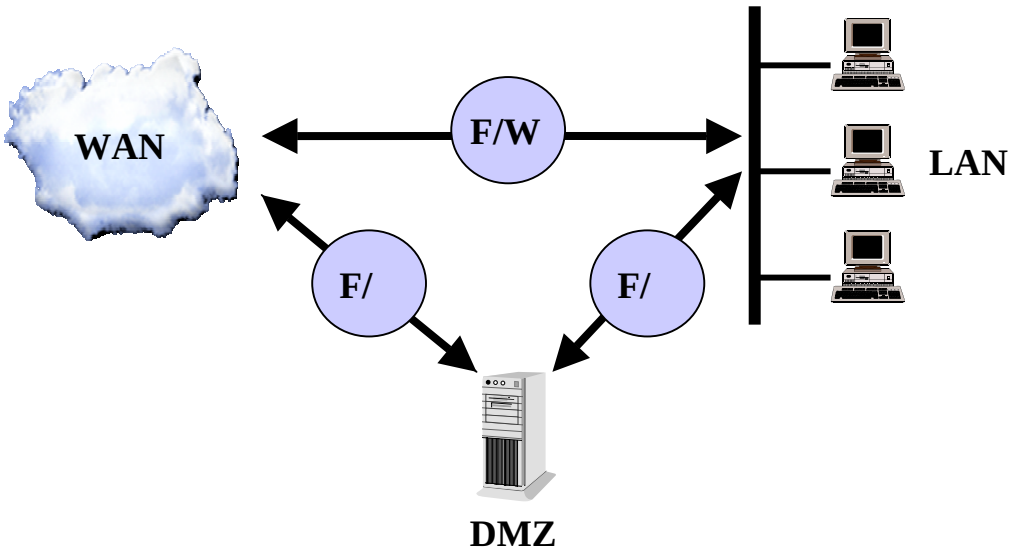

Wireless Network: Connected Wireless PCs
The following 1 wireless PCs are currently connected:
MAC Address: 00:12:f0:55:8b:23
Signal Strength: -55
Return to the wireless status page.

This page displays the MAC address of the PC currently connected to your Commander Pulse, together with the signal strength. The signal strength is the measure of radio frequency (RF) energy detected by the Commander Pulse on a specific channel. Signal strength may vary depending on the position of the PC(s) in relation to the Commander Pulse.
To return to *Wireless Network* page, click on *Return to the wireless status page*.

Firewall

The Commander Pulse is equipped with a stateful inspection firewall.
The firewall resides on the interfaces between

- WAN and LAN (External and Internal)
- WAN and DMZ (External and DMZ)
- DMZ and LAN (DMZ and Internal)

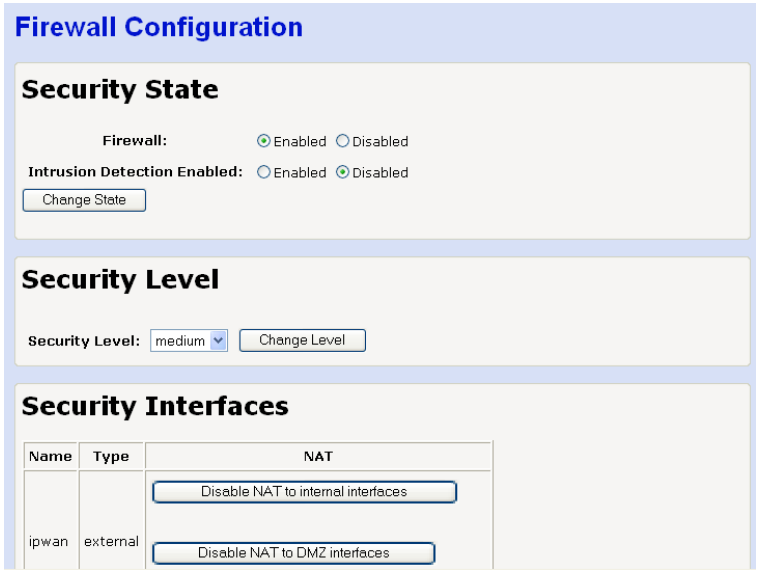


From the left-hand *Setup* menu, click on *Firewall*. The following page is displayed:

Network Security
These pages allow you to configure network security settings.
To change your firewall settings:
Firewall

Select *Firewall*. The following screen is displayed

The following screen is displayed



Security State

The Firewall is enabled by default
Intrusion Detection is disabled by default.

To disable the Firewall

1. Select "Disabled"
2. Select "Change State"
3. To enable Intrusion Detection
4. Select "*Enabled*"
5. Select "Change State"

Security Level

There are three pre-defined security levels (high, medium, and low) that contain different security filters for each interface (WAN/LAN, WAN/DMZ, DMZ/LAN). There is a fourth option called None, which is a blank firewall configuration that provides no security. Additional filters can be added to each security level. The default setting is High
The pre-defined security configurations are:

High Security Level			WAN <> LAN		WAN <> DMZ		DMZ <> LAN	
Service	Destination Port		In	Out	In	Out	In	Out
Any	TCP	0 -65535	N	Y	N	Y	N	Y
Any	UDP	0 - 65535	N	Y	N	Y	N	Y
HTTP	TCP	80	N	Y	Y	Y	N	Y
DNS	UDP	53	N	Y	Y	Y	N	Y
Telnet	TCP	23	N	Y	N	Y	N	Y
SMTP	TCP	25	N	Y	N	Y	N	Y
POP3	TCP	110	N	Y	N	Y	N	Y
FTP	TCP	21	N	Y	N	Y	N	Y
ICMP	N/A	N/A	N	Y	N	Y	N	Y
SSH	TCP	22	N	Y	Y	Y	N	Y
SIP	UDP	5060 - 6000	Y	Y	N	Y	N	Y

Medium Security Level			WAN <> LAN		WAN <> DMZ		DMZ <> LAN	
Service	Destination Port		In	Out	In	Out	In	Out
Any	TCP	0 - 65535	N	Y	N	Y	N	Y
Any	UDP	0 - 65535	N	Y	N	Y	N	Y
HTTP	TCP	80	N	Y	Y	Y	N	Y
DNS	UDP	53	N	Y	Y	Y	N	Y
Telnet	TCP	23	N	Y	N	Y	N	Y
SMTP	TCP	25	N	Y	Y	Y	N	Y
POP3	TCP	110	N	Y	Y	Y	N	Y
FTP	TCP	21	N	Y	N	Y	N	Y
ICMP	N/A	N/A	N	Y	N	Y	Y	Y
SSH	TCP	22	N	Y	Y	Y	N	Y
SIP	UDP	5060 - 6000	Y	Y	N	Y	N	Y

Low Security Level			WAN <> LAN		WAN <> DMZ		DMZ <> LAN	
Service	Destination Port		In	Out	In	Out	In	Out
Any	TCP	0 - 65535	N	Y	N	Y	N	Y
Any	UDP	0 -65535	N	Y	N	Y	N	Y
HTTP	TCP	80	N	Y	Y	Y	Y	Y
DNS	UDP	53	N	Y	Y	Y	Y	Y
Telnet	TCP	23	N	Y	Y	Y	Y	Y
SMTP	TCP	25	N	Y	Y	Y	N	Y
POP3	TCP	110	N	Y	Y	Y	N	Y
FTP	TCP	21	N	Y	Y	Y	Y	Y
ICMP	N/A	N/A	N	Y	Y	Y	Y	Y
SSH	TCP	22	N	Y	Y	Y	Y	Y
SIP	UDP	5060 - 6000	Y	Y	N	Y	N	Y

Changing the security level deletes the previous security level and any filters set and replaces them with the new configuration.

To change the security level

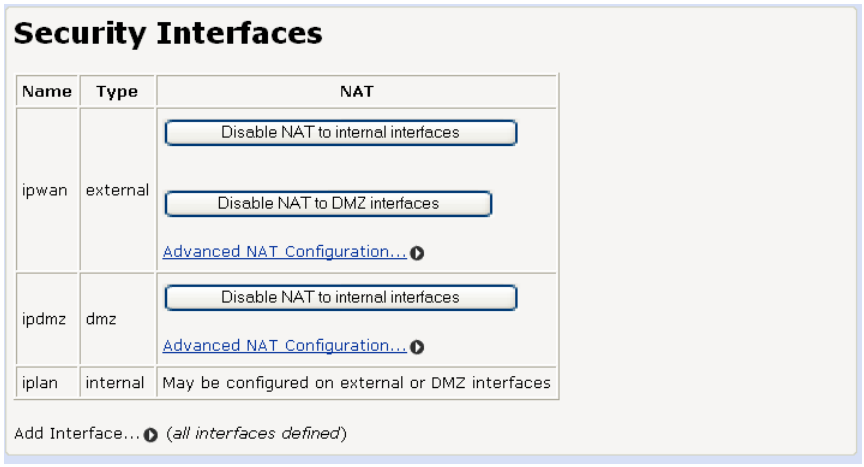
1. Select the required level from the drop-down menu
2. Select “Change Level”

NAT (Network Address Translation)

NAT is enabled by default on the three interfaces.

To disable NAT

From the main Firewall page select the option required



3. Select “Disable NAT to … (Interface)”

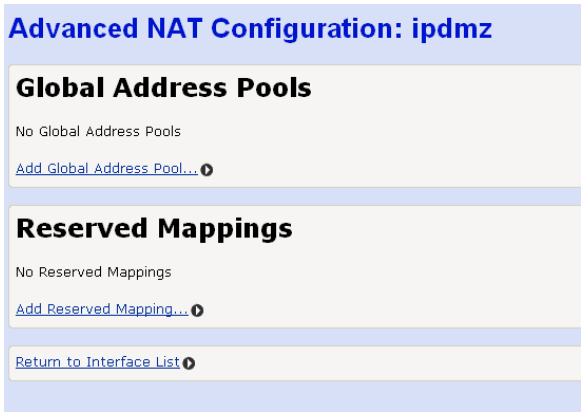
Restart the Commander Pulse for the change to take effect

Global Address Pools

A range of external IP addresses can be assigned to a specific interface.

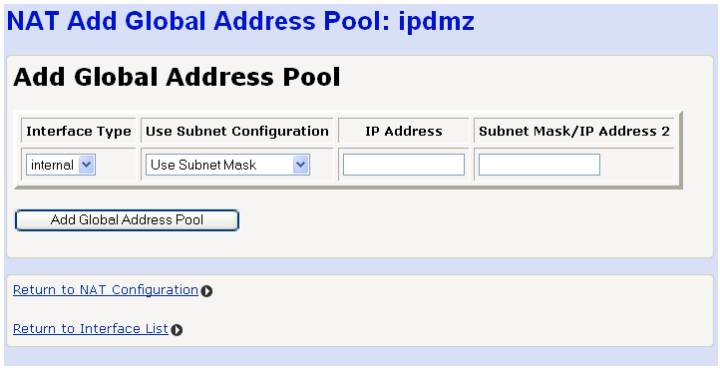
1. Select “Advanced NAT Configuration …”

The following screen is displayed



2. Select “*Add Global Address Pool …*”

The following screen is displayed.



3. Select an interface from the drop down list

4. Enter an IP address and subnet mask, or enter the first and last IP addresses in the range

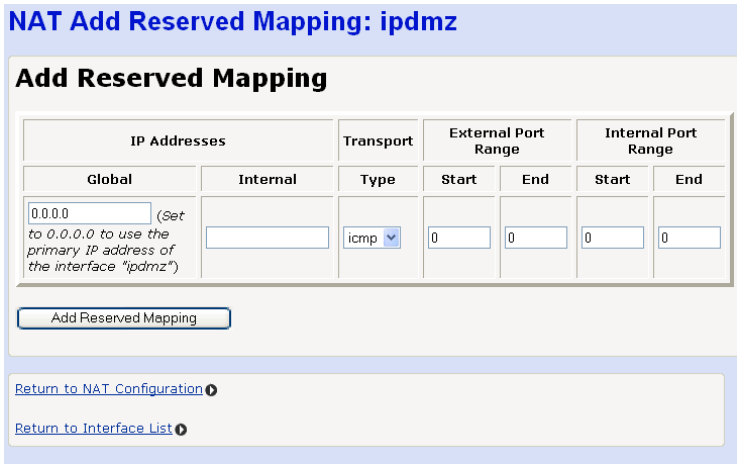
5. Select "*Add Global Address Pool*"

Reserved Mappings

Static routes can be defined between an external IP address and internal IP addresses.

1. Select "*Advanced NAT Configuration …*"
2. Select "*Add Reserved Mapping …*"

The following screen is displayed



3. Enter the following parameters:

Global IP address	This is the public IP address assigned to the WAN interface
Internal IP Address	This is the internal IP address of the server on the LAN
Transport Type	Select a protocol from the drop down list
External Port Range	A port or port range can be defined for the external IP address
Internal Port Range	A port or port range can be defined for the internal IP address

4. Select "*Add Reserved Mapping*"

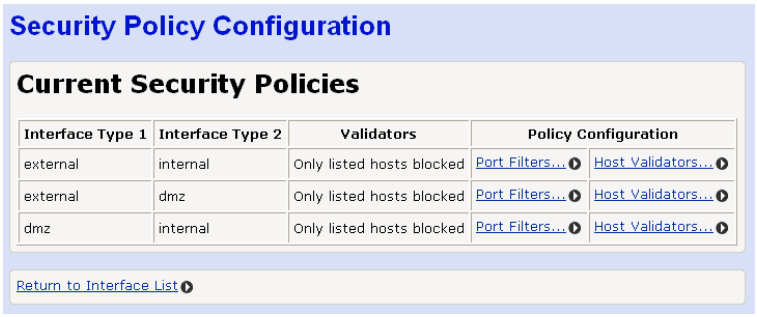
Policies, Triggers, Intrusion Detection, Logging

The security policy settings, stateful inspection triggers, intrusion policy detection and logging settings can be displayed and changed.

Security Policy

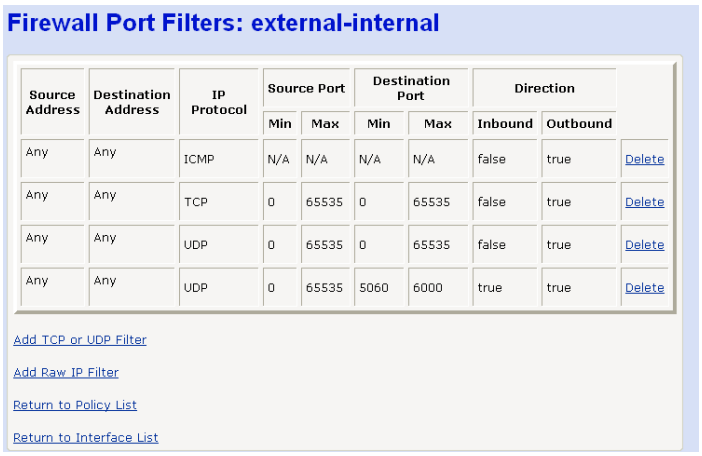
This is used to add or delete filters

1. Select "*Security Policy Configuration …*"
The following screen is displayed.



2. Select "*Port Filters …*" for an interface (external/internal, external/dmz, dmz/internal)

The following screen is displayed for the interface selected

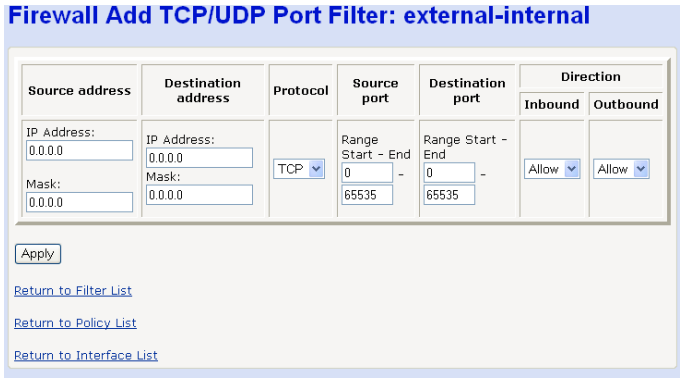


This screen lists the filters currently in effect for that interface.

Adding Port Filters

1. Select "*Add TCP or UDP Filter*"

The following screen is displayed



Enter the following parameters

- IP Source address
- IP Destination address
- IP Protocol, TCP or UDP
- Source port or range of ports (associated with source IP address)
- Destination port or range of ports (associated with destination IP address)
- Direction, Inbound or Outbound

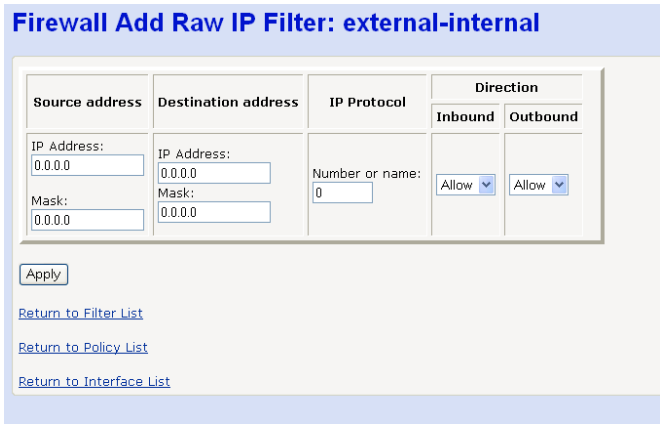
2. Select "*Apply*"
3. Save the new configuration
4. Restart the Commander Pulse

Adding Raw IP Filters

Filters based on IP address and protocol only can be added to the security level displayed.

1. Select "*Add Raw Filter*"

The following screen is displayed



2. Enter the following parameters
   - IP Source address and Subnet Mask
   - IP Destination address and Subnet Mask

- IP Protocol
- Direction, Inbound or Outbound

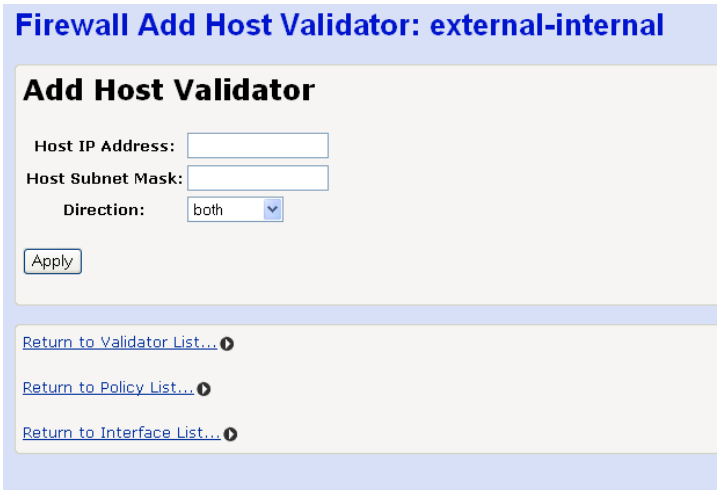
3. Select "*Apply*"
4. Save the new configuration
5. Restart the Commander Pulse

Host Validators

Traffic to or from specific hosts can be blocked by the firewall.
1. Select "*Host Validators* …" for a particular interface
The following screen is displayed

2. Select "*Add Host Validator …* " for the selected interface

The following screen is displayed



3. Enter the host IP address and Subnet mask
4. Select the direction, "Inbound", "Outbound" or "Both"
5. Select "Apply"
6. Save the new configuration
7. Restart the BROADBAND MODULE

Application Level Gateways

There are certain applications that NAT and Firewall configurations cannot manage. In many cases, ALGs (Application Level Gateways) are needed to translate and transport packets correctly. An ALG provides a service for a specific application such as FTP (File Transfer Protocol). Incoming packets are checked against existing NAT rules or Firewall filters, IP addresses are evaluated and detailed packet analysis is performed. If necessary, the content of a packet is modified, and if a secondary port is required, the ALG will open one. The ALG for each application does not require any configuration.

ALG support is provided for the following applications. If support is required for additional applications, security triggers can be configured for these.

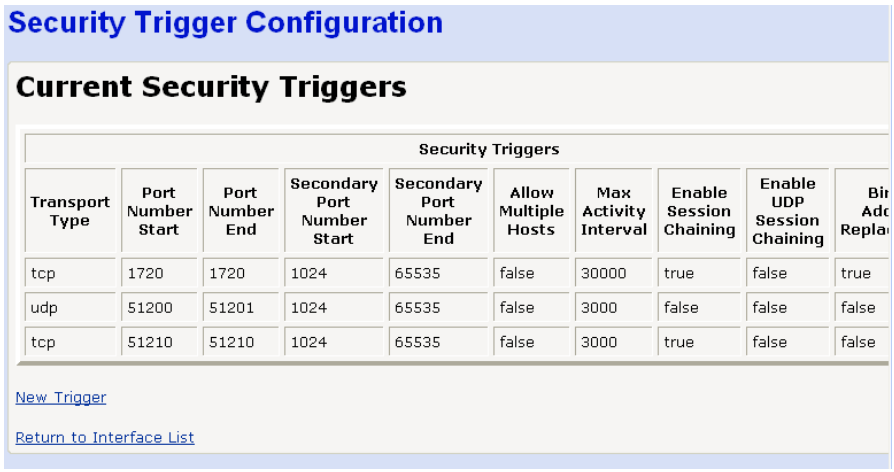
Application	TCP Port	UDP Port
AIM (AOL Instant Messenger)	5190	N/A
FTP (File Transfer Protocol)	21	N/A
IKE (Internet Key Exchange)	N/A	500
ILS (Internet Locator Service)	389 (+1002)	N/A
MSN (Microsoft Networks)	1863	N/A
PPTP (Point-to-Point Tunneling Protocol)	1723	N/A
RSVP (Resource Reservation Protocol)	N/A	N/A
L2TP (Layer 2 Tunneling Protocol)	N/A	1701
SIP (Session Initiation Protocol)	5060	5060

Security Trigger

A security trigger can be defined for applications that are not supported by the ALGs listed above. A security trigger allows the firewall to dynamically open and close secondary ports associated with a particular application and to specify the maximum length of time the port remains open.

1. Select "*Security Trigger Configuration …*"

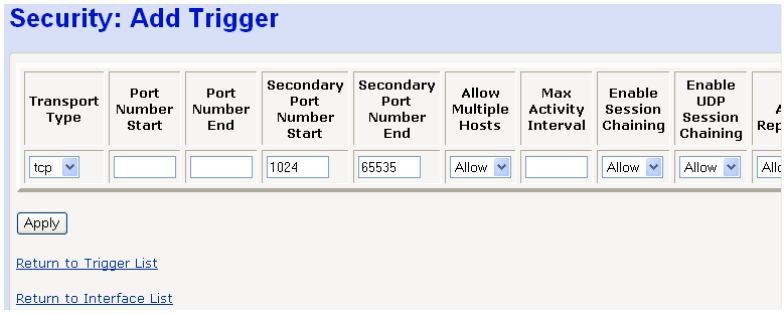
The following screen is displayed


Security Trigger Configuration
Current Security Triggers
Security Triggers
Transport Type
Port Number Start
Port Number End
Secondary Port Number Start
Secondary Port Number End
Allow Multiple Hosts
Max Activity Interval
Enable Session Chaining
Enable UDP Session Chaining
tcp 1720 1720 1024 65535 false 30000 true false true
udp 51200 51201 1024 65535 false 3000 false false false
tcp 51210 51210 1024 65535 false 3000 true false false
New Trigger
Return to Interface List

Current security triggers are displayed. There is an option to delete each entry.

2. Select "*New Trigger*"

The following screen is displayed



3. Enter the following parameters

Transport Type	Adds a trigger for a TCP or UDP application
Port Number Start	Sets the start of the trigger port range for the control session
Port Number End	Sets the end of the trigger port range for the control session
Secondary Port Number Start	Sets the start port range that the trigger will open
Secondary Port Number End	Sets the end of the port range that the trigger will open
Allow Multiple Hosts	Allow or Block sets whether or not a secondary session can be initiated to/from different remote hosts or the same remote host on an existing trigger

Max Activity Interval	The max interval time in milliseconds between the use of the secondary port sessions. If a secondary port opened by a trigger has not been used for the specified time, it is closed
Enable Session Chaining	If this is enabled, TCP dynamic sessions also become triggering sessions, which allows multi-level session triggering
UDP Session Chaining	If this is enabled, UDP dynamic sessions also become triggering sessions, which allows multi-level session triggering
Binary Address Replacement	Sets whether the destination IP address of the incoming packet is replaced with the associated internal IP address to allow NAT traversal
Address Translation Type	Sets address replacement on a particular packet type.

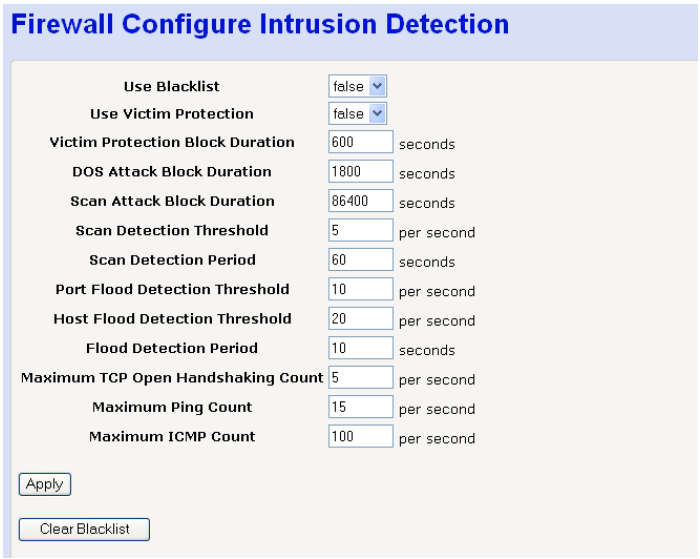
4. Select "*Apply*"

Intrusion Detection

This is used to detect and block incoming attempts to attack or block traffic to the site.

1. Select "*Configure Intrusion Detection …* "

The following screen is displayed



2. Enter the following parameters

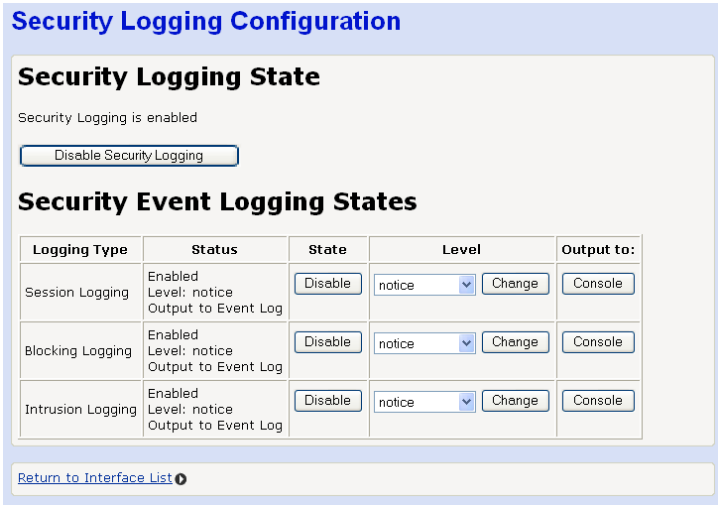
Use Blacklist	Enables or disables blacklisting of an external host if the firewall has detected an intrusion from that host. Access is denied to that host for 10 minutes.
Use Victim Protection	Enables or disables the blocking of incoming broadcast Ping commands for the period specified in Victim Protection Block duration.
Victim Protection Block Duration	The period for which incoming broadcast Pings are blocked. The default setting is 600 seconds.
DOS Attack Block Duration	If a Denial of Service attack is detected, traffic from that host is blocked for the duration specified here. The default setting is 1800 seconds.
Scan Attack Block Duration	If scan activity from a host attempting to identify open ports is detected, traffic from that host is blocked for the duration specified here. The default setting is 86400 seconds (1 day).
Scan Detection Threshold	If the number of scanning packets counted within the Scan Detection Period exceeds the value set here, a port scan attack is detected. The default setting is 5 per second.
Scan Detection Period	The duration that scanning type traffic is counted for. The default setting is 60 seconds.
Port Flood Detection Threshold	This is the maximum number of SYN packets that can be received by a single port before a flood is detected. The default setting is 10 per second.
Host Flood Detection Threshold	This is the maximum number of SYN packets that can be received from a host before a flood is detected. The default setting is 20 per second.
Flood Detection Period	If the number of SYN floods counted within this duration exceeds either the Port Flood Detection Threshold or the Host Flood Detection Threshold, traffic from the attacker is blocked for the DOS Attack Block Duration. The default setting is 10 seconds.
Maximum TCP Open Handshaking Count	This is the maximum number (per second) of unfinished TCP handshaking sessions that are allowed before a DOS attack is detected. The default setting is 5 per second.
Maximum Ping Count	This is the maximum number of Pings (per second) that are allowed before a DOS attack is detected.
Maximum ICMP Count	This is the maximum number of ICMP ins (per second) that are allowed before a DOS attack is detected.

3. Select "*Clear Blacklist*" if you wish to clear all external hosts from the blacklist.
4. Select "*Apply"*
5. Save Configuration
6. Restart the Commander Pulse

Security Logging

1. Select “Configure Security Logging …”

The following page is displayed



Logging is enabled by default for Session Logging, Blocking Logging and Intrusion Logging.

To disable all logging:

1. Select “*Disable Security Logging*”

Session Logging, Blocking Logging and Intrusion Logging.

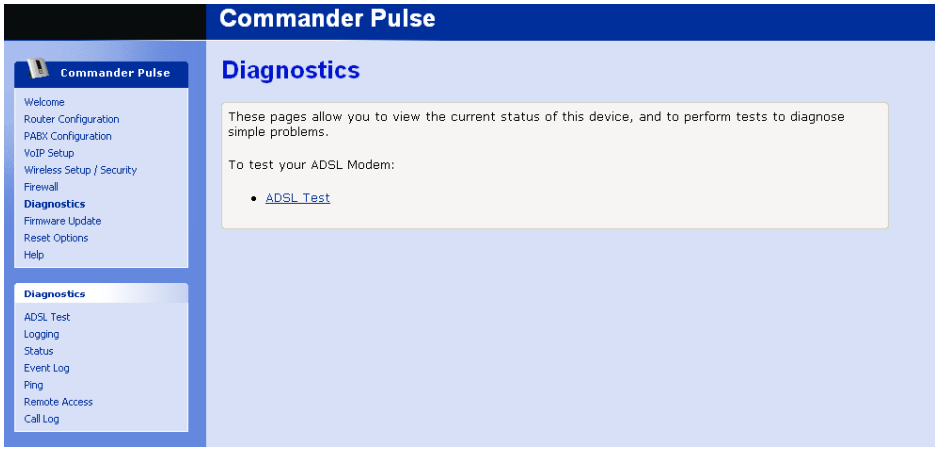
To disable any of the above
1. Select “*Disable*”
2. One of eight logging levels for reporting can be selected from the drop down menu

- Emergency
- Alert
- Critical
- Error
- Warning
- Notice
- Informational
- Debug

The output can be directed to the Console or the Event Log.

Diagnostics

A range of tests is available which can help in diagnosing problems.
Select Diagnostics on the left-hand menu. The following screen is displayed: -



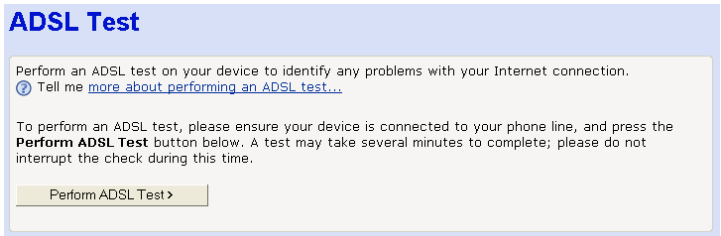
ADSL Test / ADSL Status

You can use the ADSL Test to identify any problems with your Internet connection. The ADSL Test will run a set of tests on your Internet connection and report back on anything preventing your connection from working.

The ADSL Test is only applicable when you are using the internal ADSL Modem to connect Commander Pulse to the Internet.

When should I run an ADSL Test?

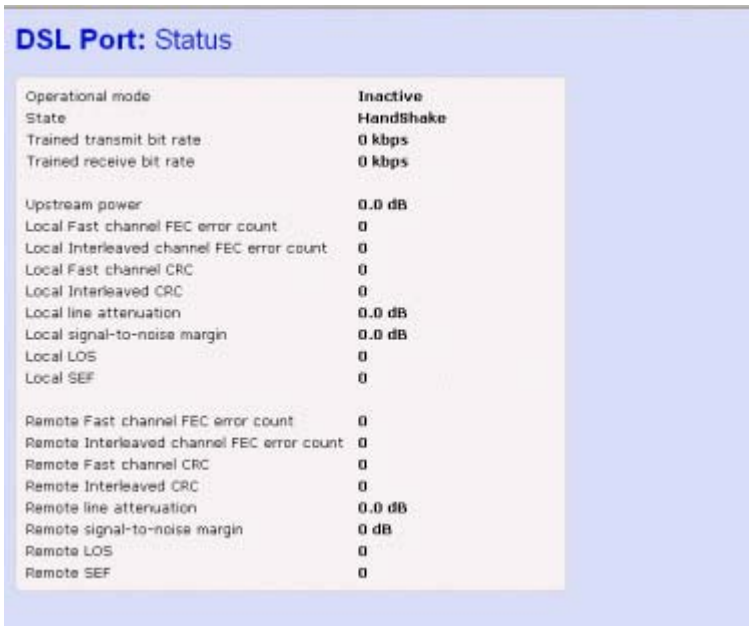
Run an ADSL Test if you cannot access the Internet. If you are contacting your Internet Service Provider to report a connection problem, it may help to run an ADSL Test so you can give their support staff additional information.


ADSL Test
Perform an ADSL test on your device to identify any problems with your Internet connection.
Tell me more about performing an ADSL test...
To perform an ADSL test, please ensure your device is connected to your phone line, and press the Perform ADSL Test button below. A test may take several minutes to complete; please do not interrupt the check during this time.
Perform ADSL Test

Before running the ADSL Test it is advisable to check the status of the ADSL connection.

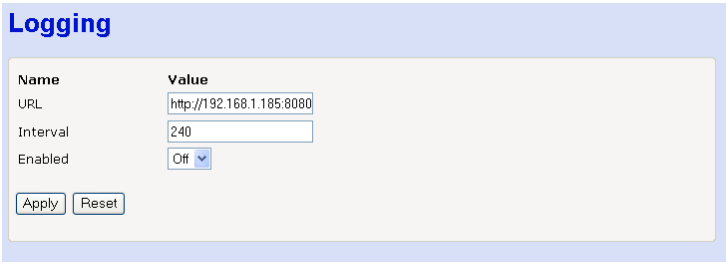
Select *DSL status* in the text *'Before running an ADSL test, you may want to monitor how your DSL connection is performing by looking at the DSL status page.'*

The following page is displayed: -


DSL Port: Status
Operational mode Inactive
State HandShake
Trained transmit bit rate 0 kbps
Trained receive bit rate 0 kbps
Upstream power 0.0 dB
Local Fast channel FEC error count 0
Local Interleaved channel FEC error count 0
Local Fast channel CRC 0
Local Interleaved CRC 0
Local line attenuation 0.0 dB
Local signal-to-noise margin 0.0 dB
Local LOS 0
Local SEF 0
Remote Fast channel FEC error count 0
Remote Interleaved channel FEC error count 0
Remote Fast channel CRC 0
Remote Interleaved CRC 0
Remote line attenuation 0.0 dB
Remote signal-to-noise margin 0 dB
Remote LOS 0
Remote SEF 0

Logging

If your system is having some problems which are not easily diagnosed you may be requested to enable logging. When enabled the system automatically sends detailed information to a server where specialist staff can analyze it. Select Logging on the left-hand side menu. The following screen is displayed: -



When requested to do so set *Enabled* to *On*. You may be requested to change the interval but in most cases this should be left at 240. When set at 240 the system automatically sends the information every four hours.

Status

1. You can examine the settings of the WAN, DMZ, LAN, VoIP, Routing table and hardware and software.
2. Select Status on the left-hand side menu. The following screen is displayed: -

Note

If an IP Trunk is configured but not registered an X will be displayed after the Password. If the trunk is configured and registered a √ is displayed

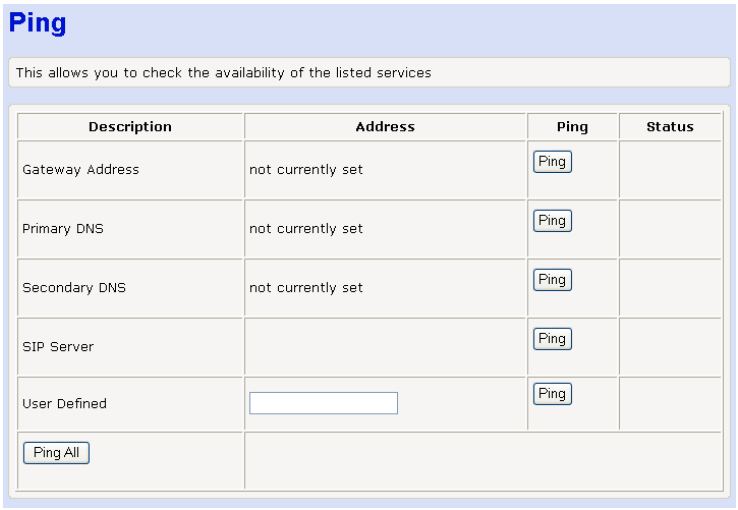
Event Log

This primarily displays recent security events e.g. blocking incoming attempts to penetrate the firewall.

Event log
Showing all events
(most recent events last; times are since last reboot, or real time if available):
Time
Event
00:00:37
im:Changed iplan IP address to 192.168.1.1
00:00:37
im:Changed ipdmz IP address to 10.7.1.1
00:00:51
im:Cannot modify name of the DHCP interface.
00:05:20
security:Session -- Prot: 17, 192.168.1.2:123 > 10.7.1.4:123 196.899 ~ 320.003 size 192/0 time-out
00:14:20
security:Session -- Prot: 1, 192.168.1.2:512 > 10.7.1.4:512 781.479 ~ 860.457 size 84/0 time-out
Clear these entries
Select events to view
Select a log...
View

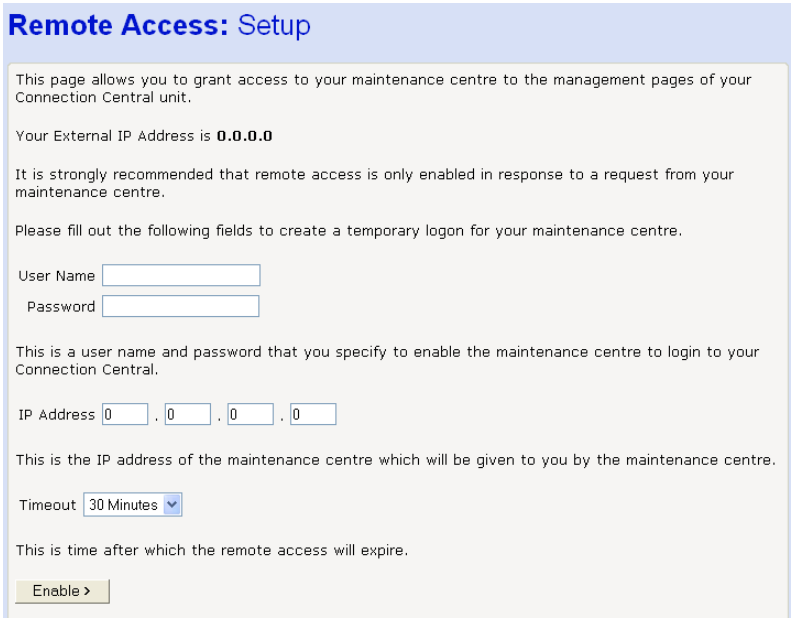
Ping

You can Ping to defined or user defined addresses



Remote Access

If requested to do so you can enable Remote access to allow maintenance personnel to access the system remotely.
Select *Remote Access* from the left-hand side menu. The following page is displayed: -


Remote Access: Setup
This page allows you to grant access to your maintenance centre to the management pages of your Connection Central unit.
Your External IP Address is 0.0.0.0
It is strongly recommended that remote access is only enabled in response to a request from your maintenance centre.
Please fill out the following fields to create a temporary logon for your maintenance centre.
User Name
Password
This is a user name and password that you specify to enable the maintenance centre to login to your Connection Central.
IP Address 0 . 0 . 0 . 0
This is the IP address of the maintenance centre which will be given to you by the maintenance centre.
Timeout 30 Minutes
This is time after which the remote access will expire.
Enable >

Your external IP address is shown. You provide this address to the maintenance engineer, as this is the address they use to access your system.

In order to make the access secure and prevent unwanted access you also define a User Name and Password that you supply to the maintenance engineer.

They will supply you with the IP address that they use to access your system. You enter this in the IP address field.

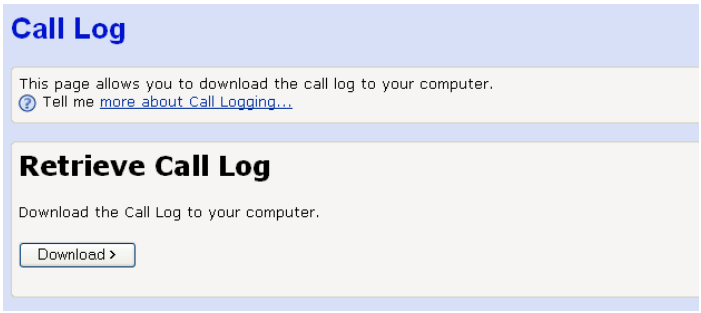
This ensures that access is allowed from that IP address only and is only allowed when the correct User Name and Password, which you define, is provided.

There is also a time out on the access that is set at 30 minutes. This can be increased or decreased as required.

Call Log

The system stores records of the last 250 calls made and received. This log can be retrieved. The log is presented in a spreadsheet format.

1. Select Call Log in the Diagnostics drop down menu. The following menu is displayed: -


Call Log
This page allows you to download the call log to your computer.
Tell me more about Call Logging...
Retrieve Call Log
Download the Call Log to your computer.
Download >

2. Select Download. You may be prompted to click on 'here' if the web browser blocks the download.

3. The records are presented in a spreadsheet format.

   - I/G or O/C : Incoming or Outgoing Call
   - Date : The Date the call was made
   - Start Time : The time the call started
   - Duration: The call duration
   - Line : The line the call was made on
   - Start phone : The phone that started the call
   - Finish phone : The phone that finished the call
   - Telephone number: The number dialed or received.

Firmware Update

The *Firmware Update* page allows you to:

- Backup and Restore configuration files for your system.
- Download an updated software version and install it on your Commander Pulse

WARNING

It is recommended that the current programming of your system be saved, using Save and Restore, prior to uploading the new software. This allows you to restore the system configuration after you have uploaded the new system software

About firmware versions

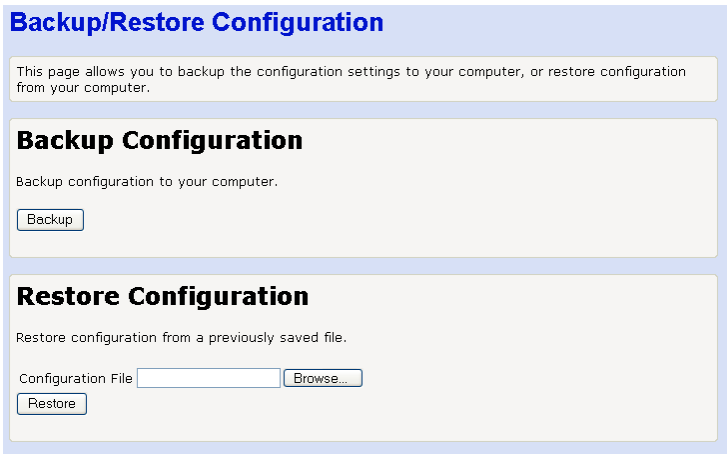
Firmware is a software program. It is stored as read-only memory on your Commander Pulse. Your product manufacturer s continually improving this firmware by adding new features to it and these features are saved in later versions of the firmware.

Note

If there is a firmware update available you are strongly advised to install it on your Commander Pulse to ensure that you take full advantage of any new feature developments.

Backup/Restore Configuration

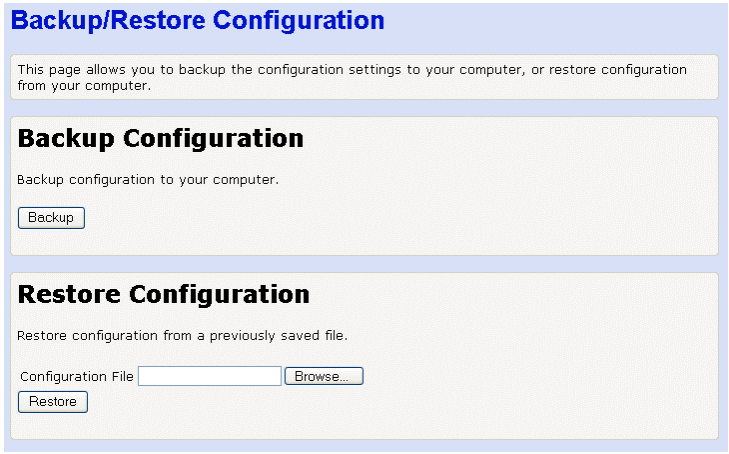
This page allows you to backup the configuration settings to your computer, or restore configuration from your computer. You should backup the system configuration before you upload a new firmware version. This will ensure all programming including speed dial lists etc are saved and can be restored when the new version of software is uploaded.


Backup/Restore Configuration
This page allows you to backup the configuration settings to your computer, or restore configuration from your computer.
Backup Configuration
Backup configuration to your computer.
Backup
Restore Configuration
Restore configuration from a previously saved file.
Configuration File
Browse...
Restore

To save the configuration to your PC select Backup. Allow a few minutes for the file to be downloaded from the system. Depending on the browser you are using you may be prompted to allow the file to be downloaded. If so the following screen will be displayed:

1. Select *here.* You will be prompted to save the file on your PC.

2. To Restore the configuration select *Browse* in the restore configuration window.


Backup/Restore Configuration
This page allows you to backup the configuration settings to your computer, or restore configuration from your computer.
Backup Configuration
Backup configuration to your computer.
Backup
Restore Configuration
Restore configuration from a previously saved file.
Configuration File
Browse...
Restore

Browse to where your saved file is.

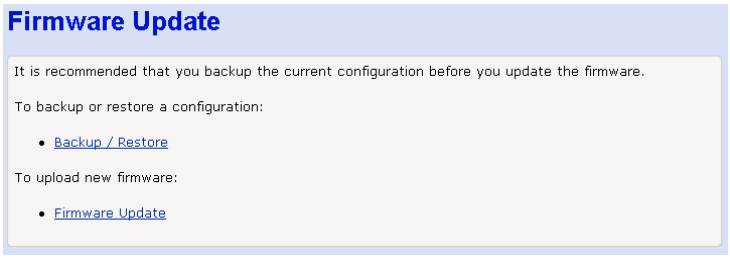
3. Select the saved file and press Restore.

You will be prompted to Restart the Commander Pulse once the file is uploaded.

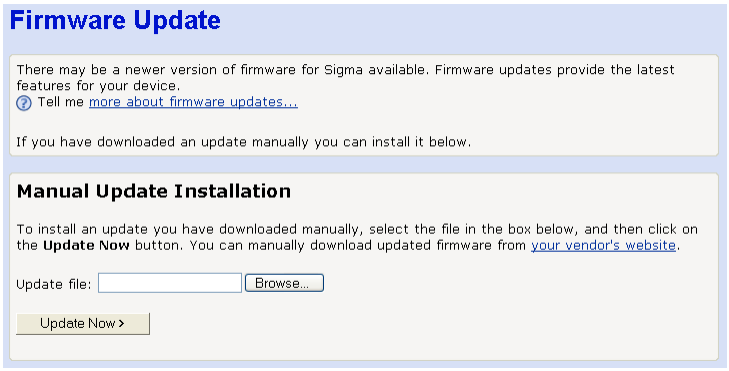
Firmware update

Before proceeding to update the system firmware, you must have downloaded the required firmware file from the appropriate Firmware update website.

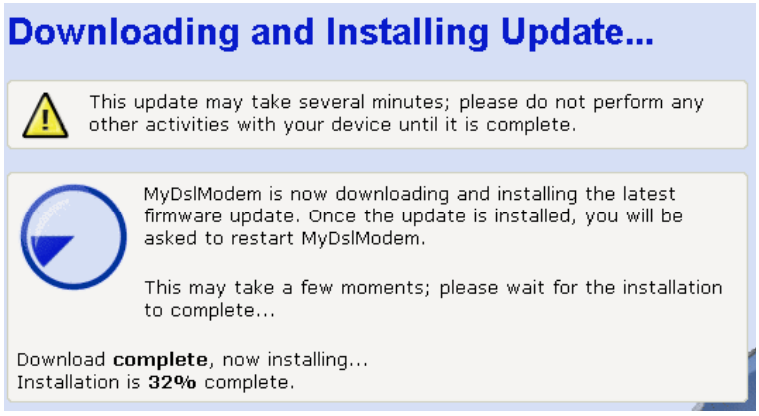
1. From the left-hand menu, click on Firmware Update. The following page is displayed:


Firmware Update
It is recommended that you backup the current configuration before you update the firmware.
To backup or restore a configuration:
Backup / Restore
To upload new firmware:
Firmware Update

2. Click *Firmware Update*. The following page is displayed.

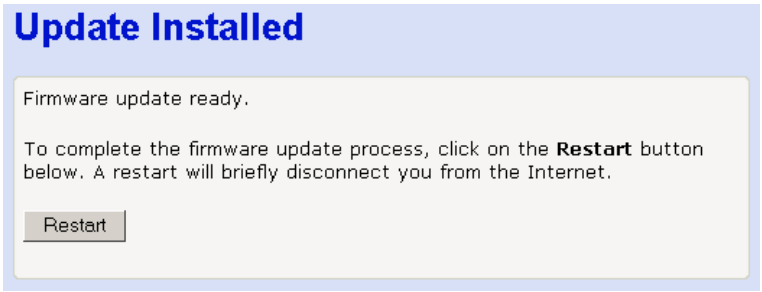

Firmware Update
There may be a newer version of firmware for Sigma available. Firmware updates provide the latest features for your device.
Tell me more about firmware updates...
If you have downloaded an update manually you can install it below.
Manual Update Installation
To install an update you have downloaded manually, select the file in the box below, and then click on the Update Now button. You can manually download updated firmware from your vendor's website.
Update file:
Browse...
Update Now >

3. Click *Browse*>. Use the *Browse file* box to navigate to the relevant directory where the firmware version is saved.
4. Once you have selected the file to be installed, click *Open*. The file's directory path is displayed in the *Update file:* text box.
5. Click *Update Now.* The following page is displayed.


Downloading and Installing Update...
This update may take several minutes; please do not perform any other activities with your device until it is complete.
MyDslModem is now downloading and installing the latest firmware update. Once the update is installed, you will be asked to restart MyDslModem.
This may take a few moments; please wait for the installation to complete...
Download complete, now installing...
Installation is 32% complete.

6. The page tells you that the firmware update is currently being downloaded and installed on your Commander Pulse.

   Once installation is complete, the following page is displayed:


Update Installed
Firmware update ready.
To complete the firmware update process, click on the Restart button below. A restart will briefly disconnect you from the Internet.
Restart

7. You must restart your Commander Pulse in order to make the Commander Pulse aware that a new firmware version has been installed. To do this, click Restart.

Note

Once the firmware update is complete the settings on the system will be defaulted except for the registration of the handsets and the voicemail messages..

Once the system has been restarted you should restore the database if you have saved it as shown above.

System Resets

This page allows you to reset your Commander Pulse to its default factory settings.

The configuration settings of your Commander Pulse are stored in a configuration file. When you set up your Commander Pulse and access the web pages for the very first time, the configuration file contains a default factory configuration. This configuration has been set by your provider for you, and contains the basic settings that you can use without having to make extensive changes to the configuration.

If you do make changes to the default configuration but then wish to revert back to the original factory configuration, you can do so by resetting the Commander Pulse to factory defaults.

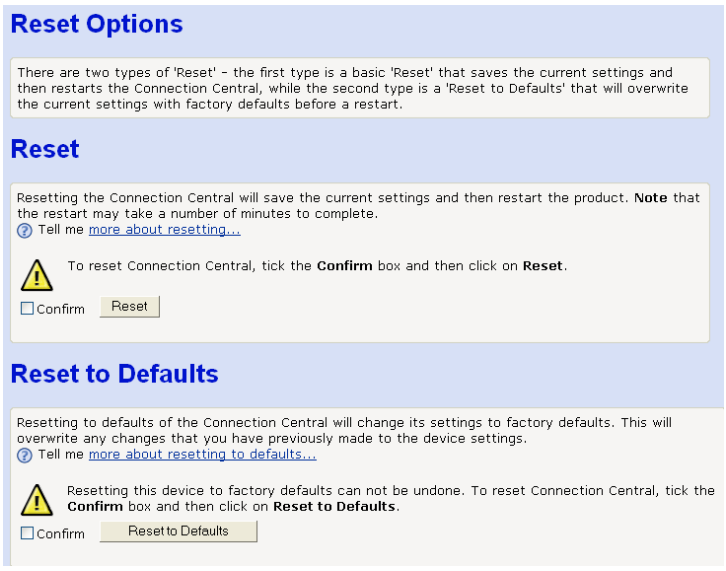
You may need to reset to defaults if you have made changes to Commander Pulse's settings causing it not to function properly.

If you are having problems connecting to your Internet Service Provider, their support staff may request that you reset to defaults to help in the connection process.

Remember that all your previous settings will be replaced.

Resetting the system

1. From the left-hand menu, click on Reset Options The following page is displayed:

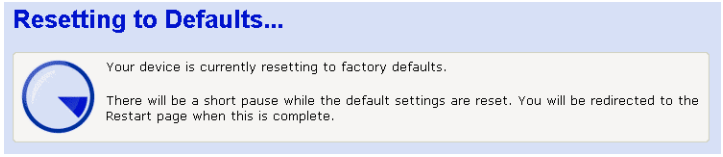

Reset Options
There are two types of 'Reset' - the first type is a basic 'Reset' that saves the current settings and then restarts the Connection Central, while the second type is a 'Reset to Defaults' that will overwrite the current settings with factory defaults before a restart.
Reset
Resetting the Connection Central will save the current settings and then restart the product. Note that the restart may take a number of minutes to complete.
Tell me more about resetting...
To reset Connection Central, tick the Confirm box and then click on Reset.
Confirm
Reset
Reset to Defaults
Resetting to defaults of the Connection Central will change its settings to factory defaults. This will overwrite any changes that you have previously made to the device settings.
Tell me more about resetting to defaults...
Resetting this device to factory defaults can not be undone. To reset Connection Central, tick the Confirm box and then click on Reset to Defaults.
Confirm
Reset to Defaults

Two options are presented, Reset and Reset to Defaults. Selecting - *Reset* invokes a reset but all the programming is retained. - - - Resetting to defaults deletes most of the system programming.

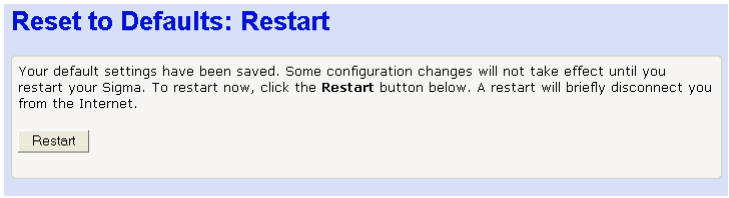
Note

If you reset your Commander Pulse to factory defaults, all previous configuration changes that you have made are overwritten by the factory default configuration.

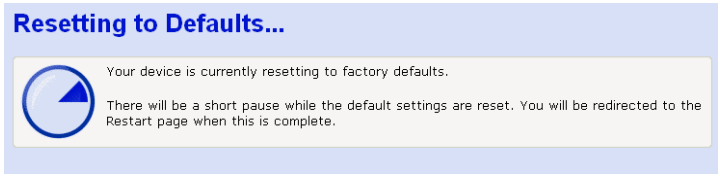
This page reminds you that resetting to factory defaults cannot be undone – any changes that you have made to the basic settings will be replaced. If you are happy with this, click in the *Confirm* box to tick it, then click *Reset to Defaults*. The following page is displayed:


Resetting to Defaults...
Your device is currently resetting to factory defaults.
There will be a short pause while the default settings are reset. You will be redirected to the Restart page when this is complete.

This page confirms that the Commander Pulse is currently resetting to factory defaults. Once the reset is complete, Restart page is displayed.


Reset to Defaults: Restart
Your default settings have been saved. Some configuration changes will not take effect until you restart your Sigma. To restart now, click the Restart button below. A restart will briefly disconnect you from the Internet.
Restart

2. Click *Restart*. The following page is displayed.


Resetting to Defaults...
Your device is currently resetting to factory defaults.
There will be a short pause while the default settings are reset. You will be redirected to the Restart page when this is complete.

Resetting to defaults also resets the username and password to their default settings. When presented with the Log in page enter the default username, ‘admin’ and the default password ‘admin’.

A Configuring Your Commander Pulse via the Keystation

To enter system programming

If your station is the Programming Station you have access to the system programming options. If you select this option you will be prompted to enter the System Programming Password. If this option is selected from any other station the display will show 'Programming Refused'. Again, the default Programming Station is station 20.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Selec*t* 'System programming'.
4. Enter the System Programming Password to access system programming.

System Setup Options

Displaying caller numbers and routing calls

Caller Number Display service is available on PSTN lines. If you subscribe to this service, your network sends the telephone number of callers to the Commander Pulse (provided the caller has not elected to restrict the network from presenting their number). The telephone number (or associated name) is displayed on the ringing keystations.

The CND information is also shown if the station is equipped with a standard phone which supports the service.

Your telephone number will also be presented to persons you call, unless you restrict your number from being presented.

How a caller number is displayed at your station

1. The caller's number will appear on the display of all keystations programmed to ring for incoming calls.
2. If a name is associated with the number in either the system speed dial store or the CND store the name will be displayed.
3. A caller may choose to withhold their identity. In this case, the display will show 'Number Withheld' instead of the caller's number or name.
4. If the number information is not available the display will show 'Number Unavailable' instead of the caller's number or name.

5. If more than one caller is calling at any one time, the number displayed will be that of the first call in the queue. When this call is answered by one of the ringing keystations the number of the next call in the queue will appear on the displays of the other ringing keystations.
6. If your keystation is not ringing for the call you may examine the incoming call ID by selecting 'Examine I/C Call'. The same information shown on the ringing keystations is then displayed.

To set up your system to display caller numbers received on PSTN lines (CND service)

If you subscribe to the Caller Number display service from your Network Provider then you can program the system to display the callers number.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. *Select '*System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (↘) until 'PSTN Programming' is displayed.
6. Press the Scroll Down Key (↘) until 'CND Detection' is displayed.
7. *Select '*CND detection'.
8. Select the lines that have the CND service enabled. The lines you select will have a ♦ displayed beside them.

Press the Hands-Free Key to finish programming.

To associate a caller number with a name, and route its calls to an station

Up to a hundred names, each a maximum of ten characters, (including spaces), may be associated with caller telephone numbers. When a number with an associated name is received, the name rather than the number is displayed.

1. Furthermore an station number may also be associated with a telephone number. In this case an incoming call from that number will ring at only that station..
2. From the Programming Station, press the PROGRAM Key
3. Press the Scroll Down Key (↘) until 'System Programming' is displayed.
4. *Select '*System Programming'.
5. Enter the System Programming Password and select 'Lines'.
6. Press the Scroll Down Key (↘) until 'CND Programming ' is displayed.
7. *Select '*CND Programming*'.*
8. Select an Index Number (01 - 30).

9. Enter the caller telephone number.
10. Press 'Confirm'.
11. Enter the name to be associated with the number. Refer to page 38 for help on how to enter names.
12. Select the destination you wish to route calls from that number to.

CND Lists – storing all calls or unanswered calls only

The system CND lists can store either all calls or unanswered calls only.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System Programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'CND store' is displayed.
6. Select 'CND store'.
7. Select 'Store All Calls' or 'Store Unanswered Calls'.

Press the Hands-free Key to finish programming.

To set up stations with an individual CND List

You can program all twelve stations to store five numbers each. Each of these stations will have a separate record of calls that ring on exchange lines programmed to ring their stations only.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System Programming' is displayed.
3. *Select '*System Programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (↘) until 'Individual CND store' is displayed.
6. *Select '* Individual CND store'.
7. Select the stations that you wish to have an individual CND list. The stations with a Individual CND store have a ♦ displayed beside them.

Press the Hands-free Key to finish programming.

Automatic line selection

This facility allows users to make external calls without having to enter the line access codes (0,8). Internal calls are made by pressing Forward Recall and dialing the number when using standard or cordless phones or selecting the number from the internal call menu on a keystation.

1. From the Programming station , press the program key
2. Press the Scroll Down Key (↘) until 'System Programming' is displayed.

3. *Select* 'System Programming'.

4. Enter the System Programming Password and select 'System'

5. Scroll down until 'Auto Line Selection is displayed'

6. Select Automatic Line selection and select 'Automatic Line selection On'.

Paging

To protect keystations against Announcements and Voice Calls

By default, all keystations may be paged. You can page-protect each keystation to prevent it from being paged from either Announcements or Voice Calls.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Scroll down until 'Page protection' is displayed
6. Select 'Page protection'
7. Select the stations you wish to protect. A ♦ is displayed beside protected stations.

Press the Hands-free Key to finish programming.

Least Cost Routing

To set up codes to allow calls to be routed on specific lines or networks

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Scroll Down and select 'LCR Codes' .
6. Select LCR On to activate the facility
7. Enter in a code index (01-50).
8. Enter an input code (Up to 5 digits). Press Confirm. This is the code dialed by the user.
9. Enter an Output Code (Up to 9 digits). This is the code that will be inserted before the telephone number that the user dials. This code can be used to select a specific Network Provider.
10. Select the preferred or exclusive option.

If 'Exclusive' is selected the calls can only be sent on the lines selected below.
If 'Preferred' is selected the calls will be routed on any available line, if none of the selected lines are available. In this case the output code is not dialed.
When Enabling or Disabling the LCR feature the new setting does not take immediate affect. There can be a delay a of up to 1 minute for the setting to take affect.

Least cost Routing activated automatically at set times

You can program the Least Cost Routing facility, to be automatically turned on and off twice during a 24-hour period enabling you to tailor your call charges through different service providers.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down key until 'LCR Timebands' is displayed.
6. Select LCR on times
7. You can enter two 'On' times.
8. Select LCR off Times
9. You can enter two times at which the LCR facility is deactivated

A Third option 'LCR weekend' is offered. When this is selected the LCR service remains active from Friday night to Monday morning, all off times over the weekend are ignored.
Press the Hands-free Key to finish programming.

To examine Station Lock Passwords

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Scroll down to 'Examine passwords'
6. Select 'Examine passwords'
7. Select 'Station lock password'.
8. Select the station. The Lock Password is briefly displayed on the top line of the display.

Press the Hands-free Key to finish programming.

Call Waiting Tone Protection

Stations may present a busy station with a Call Waiting tone, provided the busy station is not protected against receiving Call Waiting tones. By default, all stations are protected against receiving Call Waiting tones. However, you may program stations to receive Call Waiting tones.

To program an station to receive Call Waiting tones

1. From the Programming Station, select the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.

5. Press the Scroll Down Key (⇲) until 'Tone protection' is displayed.
6. Select the stations you wish to allow receive Call Waiting tones. A ◊ is displayed beside those stations allowed to receive Call Waiting tones, and a ♦ is displayed beside those stations protected against receiving Call Waiting tones. (By default, all stations will have a ♦ displayed).

Press the Hands-free Key to finish programming.

To protect an individual call from Call Waiting tones

If your station can receive Call Waiting tones, you may protect each call on an individual basis from interruption.
When you are on a call, select 'Tone protect' on the display.
From a standard telephone, the code is Forward Recall 725.

Incoming Call Handling

This option is used to allocate stations to answer incoming calls on the lines.

Associating lines with stations for Incoming Ringing

By associating lines with stations you can have lines ringing different stations in Day and Night modes.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'
5. Select 'Incoming Ringing'.
6. Select the line.
7. Select 'Day' or Night'.

The station menu is presented. Select the stations that are to ring for calls on the line. A solid diamond, ♦, indicates these stations.

Restricting Outgoing Calls

This feature lets you decide which lines each station can access for outgoing calls. By default, all stations have access to all lines.

To restrict an station from accessing a particular PSTN line

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (⇲) until 'Outgoing restriction' is displayed.
6. Select 'Outgoing restriction'.
7. Select the line.
8. Select the stations to be prevented from accessing that line. A ♦ is displayed alongside those stations that are restricted from accessing the line, and a ◊ is displayed alongside those stations that have access to the line.

Press the Hands-free Key to finish programming.

Outgoing Groups

To program lines into groups for access using the codes 0 or 8

'Exchange Lines can be grouped together in two Outgoing Groups. Each Outgoing Group is associated with a code. These codes are 0 or 8, with Group 1 being associated with 0, etc. Dialing a code selects a line from the associated Outgoing Group.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (↘) until 'Outgoing groups' is displayed.
6. Select 'Outgoing groups'.
7. Select the Group you wish to set up. Two Groups can be set up, each with a corresponding access code – 0 or 8.
8. Select the lines to be in the Group. The lines in the Group are indicated by a ♦.

Press the Hands-free Key to finish programming.
Lines can be in one Outgoing Group only. Selecting a line to be a member of a Group automatically removes it from all other Groups.

Day/Night Service

The 'Day Service' / 'Night Service' feature allows you to change the stations which ring on incoming calls, change the Class of Service at each station, and change the voice greeting heard by callers (if you have voicemail installed). These changes can take place automatically, at pre-programmed times daily, or can be invoked manually. Furthermore, the system can be programmed to remain in 'Night Service' over the weekend.

To set the automatic start and end times for Night Service

The Automatic 'Night Service' feature allows you to set two time bands in each twenty-four hour intervals; the system then automatically enters 'Night Service'.
From the Programming Station, press the PROGRAM Key

1. Press the Scroll Down Key (↘) until 'System programming' is displayed.
2. Select 'System programming'.
3. Enter the System Programming Password and select 'System'.
4. Press the Scroll Down Key (↘) until 'Night Service' is displayed.
5. Select 'Night Service'.
6. Select 'Automatic on times'
7. Select 'On Time 1' to set the first time the 'Night Service' turns on automatically
8. Select 'On time 2' to set the second time the 'Night Service' turns on automatically.
9. Select the Automatic Off times and set the two times that 'Night Service' is to turn off

To manually turn on Night Service

The Manual 'Night Service' feature enables you to turn 'Night Service' on or off manually. When you turn ''Night Service'' on, the ''Night Service'' ringing and 'Class of Service' come into operation.
At station 20 display, select ''Night Service''.

To have Night Service remain on over weekends

The Weekend Service feature ensures that if 'Night Service' is invoked on a Friday evening, the switch remains in 'Night Service' until Monday morning.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Night Service' is displayed.
6. Select 'Night Service'.
7. Select 'Weekend service'. A ♦ symbol indicates the service is on and a ◊ symbol indicates it is turned off.

Press the Hands-free Key to finish programming
To cancel Weekend service, repeat as above, selecting 'Weekend service off' as the last step.

System Time/Date

To set the time and date on the system

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Select 'Time and date'.
6. Enter the correct time in 24-hour format, (e.g. 2pm as 1400). The display will prompt for a date.
7. If you only wish to set the time select 'Confirm' and the display will revert to the Idle Menu.
8. Enter the date in dd/mm/yy format, (e.g. 10 December 1999 as 101299). When the date has been entered the display will revert to the Idle Menu.

Press the Hands-free Key to finish programming.

In the event of a power failure, you will need to reset the time and date.
Changes to the system Time will only take place when any external calls in progress at that time have cleared.
If CND is supplied on a CO line the system time will be updated by the first incoming external call after 0200 hours.

Hold Options

When an external call is placed on hold, you can choose between supplying music, a tone, or silence to the caller. The music source can be internal, in which case it is integrated into the system and cannot be changed, or external, in which case an external source must be connected to your system.

To supply music, tone or silence to callers on hold

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Music on Hold' is displayed.
6. Select 'Music on hold'.
7. Select the option ('Internal Source', 'External Source', 'Tone on Hold' or 'Silence') that you want. The default is 'Internal Source' and the ♦ indicates the current program setting. Internal callers are always returned 'Tone on Hold'.

Press the Hands-free Key to finish programming.

Hotline

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialed can be an station or an external number.

To have an station dial a number automatically, when the handset is lifted

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (↘) until 'Hot line' is displayed.
6. Select 'Hot line'.
7. Select the station from the Station Menu.
8. Enter the number to be dialed. If you wish to dial an external number, enter 0, or another line access code, before the external telephone number, to select a line.

Press the Hands-free Key to finish programming.

Note

When a keystation is programmed as a Hot Line, no other facilities can be invoked after it is programmed. As soon as you go off-hook on the keystation, the number is dialed..

Note

A common application for the Hot Line feature is for a fax or modem. The station can be set to automatically select a line so the fax or modem does not have to dial 0.

Assigning Station Names

You may assign names to stations. When an station receives an internal call, its display will show the calling station name in the place of the calling station number.

To assign a name to an station

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Select 'Name programming'.
6. From the Station Menu, select the station you want to name and enter the name as described on page 38. Up to ten characters (including spaces) can be entered for each name.
7. When the name is entered, select 'Confirm'. You will be presented with the Station Menu and can continue programming other names.

Press the Hands-free Key to finish programming.

Class of Service

Each station may be programmed for a Class of Service. This determines the type of call the station is allowed to dial. Four tables, which can be programmed with up to fifty codes, are used to implement six Classes of Service:
By default, all stations are in Class 1, that is, they have no restriction placed on them.
An station placed in Class 2 is restricted from dialing the codes programmed in Table 2. (Table 2 would typically be programmed with the international access code 001).
An station placed in Class 3 is restricted from dialing the codes programmed in Tables 2 and 3. (Table 3 would typically be programmed with non-local national access codes).
An station placed in Class 4 is restricted to internal and emergency, (000 and 106), calls only.
An station can be placed in Class 5 in addition to being in Class 2 or 3. In this case the codes programmed in Table 5 are allowed.
An station can be placed in Class 6 in addition to being in Class 1, 2 or 3. In this case the codes programmed in Table 6 are restricted.

The following table shows the types of restriction for the different Classes of Service available:

Type of restriction	Table	Class
No restriction	-	1
Restrict codes in Table 2	Table 2	2
Restrict codes in Table 2 and 3	Table 3	3
Internal and emergency calls only	-	4
Allowed codes that can be combined with Class 2 or 3	Table 5	5
Restricted codes that can be combined Class 1, 2 or 3	Table 6	6

The emergency codes are 000 and106. They cannot be barred.
Both Classes 5 and 6 can be associated with the same station. Class 5 cannot be associated with Class 4 stations.

To set up Class of Service access tables

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Class codes' is displayed.
6. Select 'Class codes'.
7. Select the 'Table' to which you want to assign codes. (Table 2, Table 3, Allowed Table, or Restricted Table).
8. Select an 'Index number' and enter the code.

When entering a code an additional option is given on the display of your keystation. This option is the "Any" key, which when selected inserts the symbol "X" into the next character of the code (number) you are entering. The symbol "X" will represent any number (1 to 0).

9. Select 'Confirm' when the code is entered.

Press the Hands-free Key to finish programming.

To restrict stations during the day

With this feature, you can assign the stations to a Class of Service that will operate when the system is in 'Day Service'. On power-up, all stations are in Class 1.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the scroll down key until 'Restriction classes' is shown
6. Select 'Restriction classes'.
7. Select 'Day Class of Service'.
8. Select the Class you want to assign to the stations, (Class 1 – Class 6).
9. Select the stations to be entered in this Class.

Press the Hands-free Key to finish programming.

To restrict station during the night

With this feature, you can assign the stations to a Class of Service that will operate when the system is in 'Night Service'. On power-up all stations are in Class 1.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.

4. Enter the System Programming Password and select 'Stations'.
5. Press the scroll down key until 'Restriction classes' is shown
6. Select 'Restriction classes'.
7. Select 'Night Class of Service'.
8. Select the Class you want to assign to the stations, (Class 1 – Class 6).
9. Enter the stations to be entered in this Class.

Press the Hands-free Key to finish programming.

To allow stations use System Speed Dials overriding call restrictions

You may wish to allow stations to dial numbers entered in the System Speed Dial list, which they are restricted from dialing directly. For example, these could be numbers that stations in Classes 2, 3 or 4 cannot dial directly. Entering these numbers into the System Speed Dial list and activating this feature on the stations allows the restricted stations to access these numbers. By default, this feature is not activated on any station.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (↘) until 'Sys. Speed no. override' is displayed.
6. Select 'Sys. speed no. override'
7. Select the stations on which you wish to activate the feature. Those stations allowed to dial System Speed Dial numbers not normally appropriate to their Class of Service are indicated by a ♦.

Press the Hands-free Key to finish programming.

Note

Numbers in an station's Personal Speed Dial list cannot override the Class of Service restriction of the station

Using Voicemail

Voicemail

Voicemail common parameters

All stations can be allocated voice boxes.
The maximum number of messages that can be stored in a Mailbox is 20 at power up. This number is programmable from 10 to 50 messages.
The maximum message and Greeting length is programmable between 60-180 seconds. The time allocated at Power Up is 120 seconds.
Unretrieved messages are deleted in 15 days and retrieved messages are deleted in 3 days.
An station must be allocated a Voice Mailbox before it can use voicemail. In default, stations are not allocated a Voice Mailbox.

To allocate a Voice Mailbox to an station

1. From the Programming station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (↘) until 'Voice Mail Boxes' is displayed.
6. Select 'Voice Mail Boxes'
7. Enter the stations to be allocated a Voice Mailbox. Those allocated a box will be indicated by a ♦.

Press the Hands-free Key to finish programming.

Remote Notification

Selecting the Stations that can activate remote notification

In default no station can set remote notification. Those stations that can set remote notification are programmed in system programming.

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until "System Programming" is displayed.
3. Select "System Programming".
4. Enter the System Programming Password and select "Stations".
5. Press the scroll down key until 'Remote Notification' is shown
6. Select "Remote Notification".
7. Select the stations that are to be allowed to use remote notification .

Selecting the Number of Simultaneous Calls

The number of simultaneous remote notification calls can be set at 1 or 2.

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until "System Programming" is displayed.
3. Select "System Programming".
4. Enter the System Programming Password and select "System".
5. Press the scroll down key until 'Remote Notification is shown
6. Select "Remote Notification".
7. Select "Simultaneous Calls".
8. Enter the value 1 or 2 and press "Confirm".
9. The default value is set at 1.

Selecting the Number of Retry Attempts

The number of simultaneous remote notification calls can be set at 1 or 2.

1. From the Programming station, press the PROGRAM key.
2. Press the Scroll Down key (↘) until "System Programming" is displayed.
3. Select "System Programming".

4. Enter the System Programming Password and select “System”.
5. Press the scroll down key until ‘Remote Notification is shown
6. Select “Remote Notification”.
7. Select “Retry attempts”.
8. Enter the value from 2 to 15 and press “Confirm”.
9. The default value is set at 2.

Selecting the Line Group that the Remote Notification calls are to use

The outgoing line group to be used for remote notification calls can be changed.

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until “System Programming” is displayed.
3. Select “System Programming”.
4. Enter the System Programming Password and select “System”.
5. Press the scroll down key until ‘Remote Notification is shown
6. Select “Remote Notification”.
7. Select “Outgoing group”.
8. Select the group.

Notification delay timer

The time interval between receiving a message and making the first remote notification attempt is programmable. This is set at 15 minutes (900 seconds) in default and can be set between 1 and 30 minutes (60 - 1800 seconds).

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until “System Programming” is displayed.
3. Select “System Programming”.
4. Enter the System Programming Password and select “System”.
5. Press the scroll down key until ‘Timers’ is shown
6. Select “Timers”.
7. Press the scroll down key until ‘Notification delay’ is shown
8. Select “Notification Delay”.
9. Enter the value between 60 and 1800 seconds and press “Confirm”.

Notification interval timer

If a remote notification fails this is the time the system waits before retrying the call. This is set at 5 minutes (900 seconds) in default. The range is 1-15 minutes (60 - 900 seconds).
From the Programming station, press the PROGRAM key**.**
Press the Scroll Down key (↘) until “System Programming” is displayed.

1. Select “System Programming”.

2. Enter the System Programming Password and select “System”.
3. Press the scroll down key until ‘Timers’ is shown
4. Select “Timers”.
5. Press the scroll down key until ‘Notification Interval’ is shown
6. Select “Notification Interval”.
7. Enter the value between 60 and 900 seconds and press “Confirm”.

Call Recording

Those stations allowed to record calls are set via system programming.

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until “System Programming” is displayed.
3. Select “System Programming”.
4. Enter the System Programming Password and select ‘Station’.
5. Scroll down and select ‘Call Recording’.
6. Select those stations that are to be allowed record calls.

Voicemail Capacity

You change the message capacity of Mailboxes from the default of 20 messages per Mailbox to a higher or lower amount from 10 to 50 depending on demand.

1. From the Programming station, press the PROGRAM key**.**
2. Press the Scroll Down key (↘) until “System Programming” is displayed.
3. Select “System Programming”.
4. Enter the System Programming Password and select ‘System’.
5. Press the Scroll Down Key (↘) until ‘VM capacity’ is displayed.
6. Select ‘VM capacity’
7. Enter the maximum number of messages to be stored per Mailbox.
8. Press the Hands-free Key to finish programming.

Voice Mail capacity % used

This feature tells the Administrator when the Voice Module capacity is approaching it's limit. When the voice module storage reached 88% of it's total capacity the system will display on the top line of station 20 the message 'ALARM MAIL ALMOST FULL'. This text will remain on the display until the capacity falls below the 88% mark again. This allows the administrator to remind user to delete old or unwanted voice mails to free up some storage time.
The Administrator can also view the % capacity used by individual voice boxes or the system box. To view this

1. From the Programming station, press the PROGRAM key.
2. Press the Scroll Down key (↘) until “System Programming” is displayed.
3. Select “System Programming”.
4. Enter the System Programming Password and select ‘System’.

5. Press the Scroll Down Key (↘) until ‘VM capacity % Used’ is displayed.
6. Select ‘VM capacity % Used’
7. Enter system programming and select "Stations".
8. Scroll through the menu and select the "VM Capacity % Used" option.
9. Select the "Answering Machine " to view the % used by the system answering machine.
10. To view the % used by a station voice box select "Stations".
11. A list of stations is shown with a solid diamond indicating a station with a voice box enabled.
12. Select the required station to view, the top line of the display will show the % of the station's voice box that is used.

To turn on your Voice Mailbox

When a station is allocated a Mailbox ‘Divert’ on no answer is automatically set to the Voice mailbox. All calls not answered by the station are automatically answered by the Mailbox.
If you wish to have all calls go immediately to the Voice Mailbox you can activate ‘Divert All Calls’ to the Voicemail. You turn on your Voice Mailbox by Diverting calls to the number 710.

1. Select ‘Divert’ on the idle menu and choose ‘Forward all calls’.
2. Select ‘Divert to VM’ or enter 710 as the station number
3. If ‘Divert on no answer’ is activated to 710, calls unanswered after four rings will be answered by the Voice Mailbox.
4. If ‘Divert when busy’ is activated to 710 calls you cannot receive will be answered by the Voice Mailbox.

To check all Voicemail Passwords

All station Voicemail Passwords can be examined from the Programming Station.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Stations’.
5. Press the scroll down key until ‘Examine Passwords’ is displayed
6. Select ‘Examine passwords’.
7. Select ‘Voicemail password’.
8. Select the station whose password you wish to examine. The Voicemail Password of that station is briefly displayed on the top line of the display.

Press the Hands-free Key to finish programming.

Answering Machine

This feature allows you to set up an Answering Machine to answer incoming calls. You can select which lines are to be answered by the Answering Machine when it is turned on. You can select how long a call rings before the Answering Machine answers.
All messages received are stored in a system Answering machine, which is controlled by station 20. Station 20 can also customize the greeting. You can turn the Answering Machine

service on and off at any time at station 20 and its operation is independent of 'Night Service'.
You can use this service if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the Answering Machine.

WARNING

If a call is received when the Voice Module storage is full, it will not be possible to store any further messages. To manage the voice mail and free up storage space see the section "Using Voicemail and other Voice Services" on page 67.

To turn the Answering Machine on and off

1. At station 20, press the Scroll Down Key (⇲) until Answering Machine' is displayed.
2. Select 'Answering Machine''
3. The top line of the display will display the 'Answering Machine' prompt. To turn the answering machine off press 'Answering Machine' again.

To program lines to be answered by the Answering machine

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (⇲) until 'Answering Machine' is displayed.
6. Select 'Answering Machine'
7. Select the lines to be answered by the Answering machine. The lines that will be answered are indicated by a ♦.

Press the Hands-free Key to finish programming.

To set the time a call will ring before the Answering Machine answers

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (⇲) until 'Timers' is displayed.
6. Select 'Timers'.
7. Select 'Answering Machine Delay '
8. Enter the time. The default is 010 seconds.

Press the Hands-free Key to finish programming.

Door station

To set up a Door station on your System

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Select 'Door station'.
6. Select 'Door station equipped'.

Press the Hands-free Key to finish programming.

To program which stations can operate the Doorstrike

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (⇲) until 'Open door restriction' is displayed.
6. Select 'Open door restriction'.
7. Select which stations are restricted from opening the door. The stations restricted from operating the Doorstrike will be indicated with a ♦.

Press the Hands-free Key to finish programming.

External Forwarding Options

This allows you to decide if External callers or External and internal Callers to your station are Forwarded externally if you have set an external Forward. It also allows stations to be prohibited from activating an external forwarding.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key (⇲) until 'External Diversion' is displayed.
6. Select 'External Diversion'.
7. Select 'No trunk to trunk calls'.
8. Select the stations that are not allowed to activate an external forwarding or set up trunk to trunk calls.

If both internal and external calls are to be Diverted select 'All calls'.

If external calls only are to be Diverted select 'External calls only'

Miscellaneous system configuration options

To change the Programming Station

System programming can only be carried out at one keystation, that is, the keystation connected to the Programming Station. By default, station 20 is the Programming Station. The Programming Station can be changed to any other station if required.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Programming position' is displayed.
6. Select 'Programming position'.
7. Select the station you wish to have as the Programming Station. The selected Programming Station is denoted by a ♦.

Press the Hands-free Key to finish programming.

Note

The programming position can not be assigned to the doorstation port or the external music on hold port if installed..

To change the System Programming Password

The default System Programming Password (1111) can be changed to any 4-digit number.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Change Password' is displayed.
6. Select 'Change password'.
7. Select 'Change' and enter the 4-digit number you require.
8. Select 'Confirm'.

Press the Hands-free Key to finish programming.

To configure unequipped line interfaces

The system assumes that available line interfaces have exchange lines connected to them. If a line interface does not have an exchange line connected ensure correct system operation by un-equipping the line interface in system programming, as follows:

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.

4. Enter the System Programming Password and select ‘Lines’.
5. Press the Scroll Down Key (⇲) until ‘Equipped Lines’ is displayed.
6. Select ‘Equipped lines’.
7. Select the lines you wish to equip or unequip. Equipped lines are denoted by a ♦. Unequipped lines are denoted by a ◊.

Press the Hands-free Key to finish programming.

To configure disconnected stations

The system assumes that all available station interfaces have Commander Pulses connected to them. If a station interface does not have a Commander Pulse connected, ensure correct system operation by disconnecting the station interface in system programming, as follows

1. From the Programming station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Stations’.
5. Press the Scroll Down Key (⇲) until ‘Station disconnect’ is displayed.
6. Select ‘Station disconnect’.
7. Select the stations you wish to connect or disconnect. Disconnected stations are denoted by a ♦.

Press the Hands-free Key to finish programming.

Note

When a keystation is connected to a station interface that is programmed as disconnected, the keystation display may appear as if the keystation is connected. However, when the handset is lifted a busy tone is heard and no options will be displayed.

To examine system passwords

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Stations’.
5. Press the Scroll Down Key (⇲) until ‘Examine passwords’ is displayed.
6. Select ‘Examine passwords’.
7. Select either ‘Station lock password’, or ‘Voicemail password’, or ‘System VM box’.

   - If you selected ‘Station lock password’, the station menu will appear. Select a station and its Station Lock Password will appear on the display.
   - If you selected ‘Voicemail password’, the station menu will appear. Select a station

and its Voicemail Password will appear on the display.

- If you selected ‘Answering machine’, the Answering machine Password appears on the display.

Press the Hands-free Key to finish programming.

To configure Line Key Lights

When a call is placed on System Hold, you can decide if the associated Line Key Light is to flash or remain steady on all other keystations. The default setting is that the light flashes.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘System’.
5. Press the Scroll Down Key (↘) until ‘Line key light’ is displayed.
6. Select ‘Line key light’
7. Choose either ‘Light flashing on hold’ or ‘Light steady on hold’.

Press the Hands-free Key to finish programming.

To prohibit trunk-to-trunk calls on an station

You may prohibit individual stations from activating External Divert, External Transfer and External Conference. (These features set up so-called trunk-to-trunk calls).

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Stations’.
5. Press the Scroll Down Key (↘) until ‘External Diversion’ is displayed and select.
6. Select ‘No trunk-to-trunk calls’.
7. Select the stations to be denied this feature. Those stations denied the feature are indicated by a ♦.

Press the Hands-free Key to finish programming.

To Change ringing from 20 to 50 Hz

This option allows the ringing frequency to be changed from the default 20Hz to 50 Hz on individual stations.

1. From the Programming Station, press the PROGRAM Key
2. Select ‘System programming’.
3. Enter the System Programming Password and select 'Stations'.

4. Press the Scroll Down Key (↘) until ‘20/50 Hz ringing' is displayed.
5. Select '20/50 Hz ringing'.
6. Select the stations to ring at 50 Hz

The default is that all stations are set for 25 Hz ringing.

Inverting ringing cadences

The external and Internal ringing cadences can be interchanged on a station by station basis.

1. From the Programming Station, press the PROGRAM Key
2. Select ‘System programming’.
3. Enter the System Programming Password and select 'Stations'.
4. Press the Scroll Down Key (↘) until ‘Reverse Cadence ' is displayed.
5. Select 'Reverse Cadence'.
6. Select the stations that require the cadences changed

Keypad Feedback

When off hook on an station fitted with a keystation, a confirmation tone is played when a digit is pressed. This is so that the user knows that a digit was dialed.

1. From the Programming Station, press the PROGRAM Key
2. Select ‘System programming’.
3. Enter the System Programming Password and select 'Stations'.
4. Press the Scroll Down Key (↘) until ‘Keypad Feedback' is displayed.
5. Select 'Keypad Feedback'.

Select the stations that require the confirmation tone to be played.

To configure PSTN lines

There are various options to configure the PSTN line interfaces on your system. It is recommended that these settings should only be altered from the original settings if there has been a change in the network connection.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Lines’.
5. Press the Scroll Down Key (↘) until ‘PSTN Programming’ is displayed.
6. Select ‘PSTN' programming’.
7. Select the desired option as detailed in the table below. The options are either explained in the following pages or in the referenced pages

Press the Hands-free Key to finish programming.

Programming Option	Default setting	Alternate setting
Reversal on Idle	Off	on
CND Detection	CND not set	CND set
Dialtone detection	Off	On

Programming CND Detection

On standard PSTN lines on the Commander Pulse the CND option is provided. The system can then detect when CND information is being sent from the network and display the number.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Lines’.
5. Press the Scroll Down Key (⇲) until ‘PSTN programming’ is displayed.
6. Select ‘PSTN programming’.
7. Press the Scroll Down Key (⇲) until ‘CND Detection' is displayed.
8. Select 'CND Detection' The lines with 'CND Detection' programmed are indicated with a ♦.

Programming Dialtone Detection

This feature is provided as a programmable option under PSTN programming and is enabled to prevent the system from dropping the line when dial tone has not been detected. When enabled AND dial tone is not detected ,the line is only released if no digit is dialed and the "Dialing time-out timer" is activated

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (⇲) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘Lines’.
5. Press the Scroll Down Key (⇲) until ‘PSTN programming’ is displayed.
6. Select ‘PSTN programming’.
7. Press the Scroll Down Key (⇲) until ' Dialtone detection' is displayed.
8. Select ' Dialtone detect' The lines with ' Dialtone detection' enabled are indicated with a ♦.

Button Hopping

When Button hopping is enabled if you press a second line key while on a call on another line the first call is disconnected. With button hopping off the first call is placed on hold when the second line key is pressed.

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until ‘System programming’ is displayed.
3. Select ‘System programming’.
4. Enter the System Programming Password and select ‘System’.
5. Press the Scroll Down Key (↘) until ‘Button Hopping’ is displayed.
6. Select Button hopping.
7. Select ‘Autohold’ or ‘Disconnect’

Autohold is set by default.

To set system timers

You can set various timers from the Programming Station to suit your requirements.

From the Programming Station, press the PROGRAM Key

1. Press the Scroll Down Key (↘) until 'System programming' is displayed.
2. Select 'System programming'.
3. Enter the System Programming Password and select 'System'.
4. Press the Scroll Down Key (↘) until 'Timers' is displayed.
5. Select 'Timers'
6. Select the required timer to be changed and enter the duration. (See table below).
7. Confirm the new time.

Press the Hands-free Key to finish programming.

Timers	Range	Default setting
Recall on hold	001 – 1800	90 seconds
Recall on transfer	001 – 180	90 seconds
Forward on no answer	01 – 30	11 seconds
Open the door	01 – 30	5 seconds
Door station ring duration	01 – 30	30 seconds
Call park	001 – 600	180 seconds
Ringback time duration	01 – 30	30 seconds
Answer machine delay	01 – 30	10 seconds
Programmable message length	30 - 180	120 seconds
Notification delay	60-1800	900 seconds
Notification interval	60-900	300 seconds

Recall on Hold

This is the time that elapses before a call, which has been placed on hold, rings back the station that put the call on hold.

Recall on transfer

This is the time that elapses before a call, which has been transferred and not answered, rings back the station that attempted the transfer.

Forward on no answer

This is the time that elapses before a call ringing at an station, with 'Forward On No Answer' set, is Forwarded.

Open the door

This is the time that the Doorstrike relay will remain open following activation.

Door station ring duration

This is the time that stations will ring when the Door station is pressed.

Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call station

Ringback time duration

This is the time an station will ring when Ringback has been invoked.

Ans. Machine delay

This is the time that elapses before an unanswered incoming call is presented with the Answering Machine greeting.

Programmable message length

This is the maximum length of a message left in a Mailbox or a Greeting for a Mailbox.

Notification delay

This is the delay between receiving a voice mail message and attempting a remote notification call.

Notification Interval

This is the delay after making an unsuccessful remote notification call before attempting another call.

To reset your system

There are two system reset options available – a warm and a cold reset.

1. From the Programming station, press the PROGRAM Key
2. Press the Scroll Down Key (↘) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (↘) until 'Reset options' is displayed.
6. Select 'Reset!' or 'Reset to default!'

WARNING

These are complete system resets, not individual station resets. Selecting 'Reset!' (warm reset) will reset the system and cut off all established calls. Selecting 'Reset to default!' (cold reset) will reset the system, cut off all established calls and remove all programming from the system.

B DECT Handset Detailed Instructions

Battery requirements: The handset requires power source of two rechargeable NiMH batteries, size AAA 1.2V 750mAh (HR10/44).

Safety precautions:

- Do not allow the handset to come into contact with liquids or moisture.
- Do not allow the charging contacts or the battery to come into contact with conductive materials.
- There is a slight chance that the telephone could be damaged by an electrical storm. It is recommended that users unplug the phone from the mains supply and telephone socket during a storm.
- Do not use the handset in an explosive hazard area such as where there is gas leaking.
- Because the phone works by sending radio signals between the base unit and the handset, wearers of hearing aids may experience interference in the form of a humming noise.
- We advise that this phone should not be used near intensive care medical equipment or by persons with pacemakers.
- Your phone can interfere with electrical equipment such as answering machines, TV and radio sets, clock radios and computers if placed too close. It is recommended that you position the Commander Pulse at least one meter from such appliance

WARNING

Use only the mains adapter supplied with this telephone. Incorrect adapter polarity or voltage can seriously damage the telephone. Input: 100-240Vac/ 50-60Hz / .5A. Output: 24 VDC 700 mA

WARNING

THERE IS A RISK OF EXPLOSION IF THE BATTERY IS REPLACED BY AN INCORRECT TYPE. Never use non rechargeable batteries. Use two rechargeable NiMH batteries, size AAA 1.2V 750mAh (HR10/44) only. NiMH batteries must be disposed of in accordance with the applicable waste disposal regulations.

Setting up your phone

- Connect the output plug of the mains adapter to the socket on the back of the charger unit and the mains adapter to the wall mains supply.
- Place the 2 rechargeable NiMH AAA batteries (included), observing their polarities, into the battery compartment on the handset. Slide the battery door firmly into place.
- Place the handset on the base unit and let the batteries charge for a full 14 hours before using it for the first time.

Note

The handset may get warm during the initial charge.

Switch on/off your phone

To switch off the power of your phone press and hold during standby.
To switch on the power of your phone press . The battery icon will display in 10 seconds. If the battery level is too low, the handset may not power up.

To set your handset's clock

Your clock resets to 12:00AM or 00:00, depending on time format you are using, each time you replace the batteries or switch off the handset.
To set your clock:

1. Press MENU during standby.
2. Press to select DISPLAY, and then press OK.
3. Press to select CLOCK, and then press OK.
4. Press to change the HOUR, and then press
5. Press to change the MINUTE.

If you set the time format of your clock to 12 hours, go to step 6. If you set it to 24 hours, go to step 7.

6. Press. Press to select AM/PM.
7. Press OK to confirm.

Set the clock to 12/24 hours

To change your handset's time format:

1. Press MENU.
2. Press to select DISPLAY. Press OK.
3. Press to select TIME FORMAT. Press OK.
4. Press to select 12 HOURS or 24 HOURS.
5. Press OK to confirm.

Using your phonebook

You can use your phonebook to manage your contacts. Your phone has a private phonebook and a shared phonebook. The information in your private phonebook is stored in your handset. If you have more than one handset, each handset has its own phonebook.
The information in your shared phonebook is stored in System Speed dial list in the Commander Pulse. The information is shared by all the Dect handsets and wired keystations. See system speed dial on page 47 on the programming of the list from a keystation.
Your phone must have a link with the base unit in order to use the shared phonebook.
Your private phonebook can store 100 records and the system phonebook also has 99 records.

To store a name and number in the private phonebook

1. Press *NAMES.*
2. Select the private phonebook and press *OK*.
3. Select *ADD ENTRY*, and then press *OK.*
4. Enter the name for the record. You must enter a name.
5. Enter the number. In the Private phone book the line access code 0 must be entered.
6. Press *SAVE* to confirm the information you have entered.

To store a name and number in the shared phonebook

1. Press *NAMES.*
2. Select the shared phonebook and press *OK*.
3. Press to select *ADD ENTRY*, and then press *OK.*
4. Enter the name for the record. You must enter a name.
5. Enter the number. In the Shared phone book enter the external number only. The line Access code must NOT be entered.
6. Press *SAVE* to confirm the information you have entered.

Note

The shared phonebook is the system speed dial list. Numbers can be entered from a keystation or the web management interface as well as the DECT handsets

Managing your contacts

1. Press *NAMES*
2. Select *PRIVATE*.
3. Press *OK*.
4. Select *VIEW*
5. Scroll to the contacts you wish to view or search by letter.

To view the details of your contacts press *OPTIONS*.
Select DETAILS. Press *OK*. The details of the contact you selected are displayed.

Programming Quick Dial Keys

This feature allows you to dial to the contacts in your private phonebook by pressing and holding a quick dial key that you have assigned. You can assign 9 quick dial keys (keys 1-9).

Assign a quick dial key

1. Press NAMES.
2. Select PRIVATE, and then press OK.
3. Select QUICK DIAL. Press OK. The first quick dial key is displayed.
4. Scroll to the quick dial key you wish to use. If no number is assigned to the quick dial key, the display shows EMPTY. To assign a number, press SELECT, If there is already a number assigned to the quick dial key, the display shows the name and number of the contact.
5. To assign a new number press OPTIONS. Select CHANGE. Press OK. The display shows the list of contacts in your private phonebook.
6. Select the contact.
7. Press DETAILS. The display shows the details of the contact that you selected. Press OK to confirm.

Delete a quick dial key

1. Press NAMES.
2. Select PRIVATE, and then press OK.
3. Select QUICK DIAL, and then press OK. The first quick dial key is displayed.
4. Scroll to the quick dial key you wish to delete.
5. Press OPTIONS.
6. Select DELETE.
7. Press OK.
8. CONFIRM? is displayed. Press OK to confirm.

Delete a contact from your private phonebook

1. Press NAMES and select, PRIVATE Press OK.
2. Press NAMES and select, PRIVATE Press OK.
3. Select VIEW. Press OK.
4. Scroll to the contact you wish to delete or search by letter.
5. Press OPTIONS. Select DETAILS. Press OK. The details of the contact you selected are displayed.
6. Press OPTIONS.
7. Select DELETE.
8. Press OK.
9. CONFIRM? is displayed. Press OK to confirm.

Delete all contacts in your private phonebook

1. Press NAMES
2. Select PRIVATE
3. Press OK.
4. Select DELETE ALL.
5. Press OK.
6. CONFIRM? is displayed. Press OK to confirm.

Status of the private phonebook

Your phone keeps track of how much memory you have used and how much is still available in your phonebook.

1. Press *NAMES*
2. *S*elect *PRIVATE*
3. Press *OK*
4. *S*elect STATUS.
5. Press *OK* to view the status. The number of used and free locations are displayed.
6. Press *OK* when finished.

Call a number in your phonebook

1. Press *NAMES*.
2. Select *PRIVATE*
3. Press *OK*.
4. Select *VIEW*.
5. Press *OK*. Scroll to the contact you wish to call or search by letter.
6. Press *OPTIONS*.
7. Select *DETAILS*.
8. Press *OK*. The details of the contact you selected are displayed.
9. Press

Find out who has called you and whom you have called

Your phone keeps a record each time you make, receive or miss a call. You can access a list of the last 20 calls that you have missed and a list of the last 10 calls you have dialed and the last 10 calls you have received. You can keep track of whom you've talked to and for how long.

Check your call records

1. Press the *CALLS* Key
2. Select *MISSED*, *DIALED* or *RECEIVED*.
3. Press *OK*. A list of call records is displayed. Scroll through the list.
4. Press *OPTIONS*. Select *DETAILS*. Press *OK*.

Transfer the call records to your private phonebook

You can transfer the call records to your private phonebook

1. Press the *CALLS* Key
2. Select *MISSED, DIALED* or *RECEIVED*.
3. Press *OK*. A list of call records is displayed. Scroll to the entry you want. To view the details of the call records entry, go to step 4. If not, go to step 5.
4. Press *OPTIONS*. Select DETAILS. Press *OK*.
5. Press *OPTIONS*. Select *TO PRIVATE* to copy to the private phonebook. Press *OK*.
6. You must enter a name. Add or edit the name using the keypad. Press *CLEAR* to erase a character or digit.
7. Press . Add or edit the number using the keypad. Press *CLEAR* to erase a digit. There must be a number.
8. Press *SAVE.*

View the call timer

1. Press the *CALLS* key.
2. Select *CALL TIMERS*.
3. Press *OK*.
4. Select *LAST CALL, DIALED, RECEIVED,* or *ALL CALLS.*
5. Press *OK.* The time you spent on the calls is displayed.
6. Press *OK* when finished.

Reset the call timer

1. Press the *CALLS* key
2. Select *CALL TIMERS*.
3. Press *OK*.
4. Select *CLEAR ALL.* CONFIRM? is displayed.
5. Press *OK* to confirm. The call timer is reset and will start counting from 0 seconds.

Call a number in your call records

While you are reviewing the call records, you can make a call or return a call to the person.

1. Press the *CALLS* key.
2. Select *MISSED, DIALED* or *RECEIVED*.
3. Press *OK*. A list of call records is displayed. Scroll to the entry you want.
4. Press OPTIONS. Select *DETAILS*. Press *OK*.
5. Press

Using your services key

Your handset can store 10 feature codes in the services directory. Each code can have up to 10 characters for the name and 20 digits for the code. See page 54 for the feature codes.

To store a feature code name and number

1. Press the *SER* key.
2. Select *ADD ENTRY.*
3. Press *OK*.
4. Enter the name for the feature. You must enter a name.
5. Enter the number for the record. You must enter a number.
6. Press Save

Duplicate name

You cannot enter an identical name for different records in your services directory. If so, DUPLICATE NAME is displayed. Press *OK* to replace the existing record with the new entry or press *CANCEL* to return to the previous display and make changes to the name.

Delete all of the services directory

1. Press the *SER* key.
2. Select *DELETE ALL.*
3. Press *OK*.
4. CONFIRM? is displayed.
5. Press *OK*.

Call a number in your services directory

1. Press the *SER* key
2. Select *VIEW.* Press *OK*. The list of services is displayed.
3. Scroll to the service you wish to call or search by letter.
4. Press *OPTIONS.*
5. Select *DETAILS.*
6. Press *OK*. The details of the service you selected are displayed.
7. Press

Additional features

Keypad lock

Locking the keypad prevents accidental key presses when you put your phone in the pocket.

To Lock.

- Press and hold *LOCK* during standby. The keypad is locked. To unlock the keypad:

To Unlock

- Press *UNLOCK.* UNLOCK? is displayed. Press *OK*. The keypad is unlocked.

Screen saver

The screen saver comes on when your phone is inactive for 30 seconds in standby. The screen saver is a clock that shows the current time of your phone.
During screen saver mode, Press any soft key and the phone will go to standby.

Personalizing your handset

Personalize your phone's display

To name your phone:

1. Press *MENU.*
2. Press *OK*.
3. Select *HANDSET NAME.*
4. Press *OK*.
5. Enter or edit the name.
6. Press *OK* to confirm.

Change your wallpaper

Change the wallpaper to give your phone a refresh look with your style.

1. Press *MENU*.
2. Select *DISPLAY*.
3. Press *OK*.
4. Select *WALLPAPER*.
5. Press *OK*.
6. Select the wallpaper.
7. Press *OK* to confirm.

Change the display color

Change the color of the menus, highlight, and background of your phone to your color.

1. Press *MENU.*
2. Select *DISPLAY*.
3. Press *OK*.
4. Select *COLOR*.
5. Press *OK*.
6. Select the color. The color of the menus will change as you select the different colors.
7. Press *OK* to confirm.

Personalize your sounds

You can assign different ringing melodies for each handset at different volume levels.
Your phone also provides key press tones, confirmation tones and Parking tones.
Key tones are tones that your phone makes each time you press a key on the phone.
Confirmation tones are tones that your phone makes when an operation is successful.
Parking tones are sounded when you place your phone on the base unit for charging.

To set your handset's ringing melodies and volume:

1. Press *MENU.*
2. Select *SOUNDS.*
3. Press *OK.*
4. *S*elect *HANDSET*.
5. Press *OK.*
6. Press to change the volume level.
7. Press To select melody
8. Press to select the melody.
9. Press OK to confirm when finished.

To set your handset's key tones

1. Press *MENU.*
2. Select SOUNDS.
3. Press *OK.*
4. *S*elect *HS KEY TONES.*
5. Press *OK.*
6. Select ON or OFF.
7. Press *OK* to confirm.

To set your handset's confirmation/parking tones

1. Press *MENU.*
2. Select *SOUNDS*.
3. Press *OK.*
4. *S*elect *HS TONES.*
5. Press *OK*.
6. Select *ON* or *OFF*.
7. Press *OK* to confirm.

To set the alarm clock

1. Press *MENU.*
2. *S*elect *EXTRAS*.
3. Press *OK.*
4. *S*elect *ALARM CLOCK.*
5. Press *OK.*

6. Select *ON* or *OFF.*
   To set the alarm clock on, press *OK* and continue to step 5.
   To set the alarm clock off, press *OK* to confirm.
7. Press to set the hour.
8. Press
9. Press to set the minute. If your phone's time format is set to 12 hours, go to step 7. If it is 24 hours, go to step 8.
10. Press Press to set AM/PM.
11. Press *OK* to confirm.

When the Alarm Clock rings: -

1. Press STOP to turn off and deactivate the alarm clock

2. Press SNOOZE. The alarm clock will ring again in 10 minutes.

Baby Monitor

When Baby Monitor is set other stations can call the phone. The station automatically answers the call and the caller can listen.

1. Press *MENU.*
2. Select *EXTRAS*.
3. Press *OK.*
4. Select *BABY MONITOR.*
5. Press *OK*.
6. Select *ON.*

The display shows *BABY MONITOR* and the option *CANCEL.*

To turn Baby Monitor off

1. Select CANCEL

2. CONFIRM? is shown.

3. Select OK.

Timer

The handset will ring after the time you set has elapsed.

1. Press MENU.
2. Select EXTRAS.
3. Press OK.
4. Select TIMER.
5. Press OK.
6. Press to set the HOUR.
7. Press
8. Press to set the MINUTE.
9. Press.

10. Press ◂ ▸ to set the SECOND.

11. Press *OK* to confirm. The timer starts counting and your can see the timer on display.
    The countdown timer will ring once it finishes counting the time you set.
    Press *STOP*. The countdown timer will stop ringing.

Stopwatch

1. Press *MENU.*
2. Select *EXTRAS*.
3. Press *OK.*
4. Select STOPWATCH.
5. Press *OK*.
6. Press *START.* The stopwatch starts counting.
7. Press *STOP*. The stopwatch stops. You can choose to reset the stopwatch or cancel the stopwatch.
8. Press *PAUSE.* The stopwatch pauses counting.
9. Press *RESUME* to start the stopwatch again from the paused time.
10. Press *CANCEL*. The stopwatch is deactivated.

Using touch & dial

Touch & dial allows you to call a number by pressing any key (except *CANCEL*) on your handset.

1. Press *MENU.*
2. *S*elect *EXTRAS*.
3. Press *OK.*
4. *S*elect *TOUCH & DIAL*.
5. Press *OK.*
6. *S*elect *ON.* Press ▾. Enter the phone number.
7. Press *OK* to confirm. Your phone returns to standby.

If *activated*, *TOUCH & DIAL* is displayed.

To *deactivate* Touch and Dial

1. Press *CANCEL*. CONFIRM? is displayed.
2. Press *OK* to confirm. Your phone returns to normal mode.

Auto answer
Auto answer gives you the convenience of answering a call by just picking up the phone from the base unit or charger.
You do not need to press any key to answer the call.
To activate or deactivate auto answer:

1. Press *MENU.*
2. *S*elect *SYSTEM.*
3. Press *OK*
4. *S*elect *AUTO ANSWER.*
5. Press *OK.*
6. *S*elect *ON* or *OFF.* Press *OK.*

Icons on your handset's display.

		Base/Handset link	Name
		Call in progress	Number
		Battery Level	Volume level; I block = lowest volume; 3 blocks = highest volume
		Loudspeaker	Internal melody
		Alarm Clock	Mode
		Ringer off	Prefix
		Key lock	Volume

C IP Addresses, Network Masks & Subnets

IP Addresses

Note

This section refers only to IP addresses for IPv4 (version 4 of the Internet Protocol). IPv6 addresses are not covered.

This section assumes basic knowledge of binary numbers, bits, and bytes.

IP addresses, the Internet's version of telephone numbers, are used to identify individual nodes (computers or systems) on the Internet. Every IP address contains four numbers, each from 0 to 255 and separated by dots (periods), e.g. 20.56.0.211. These numbers are called, from left to right, field1, field2, field3, and field4.
This style of writing IP addresses as decimal numbers separated by dots is called *dotted decimal notation*. The IP address 20.56.0.211 is read "twenty dot fifty-six dot zero dot two-eleven."

Structure of an IP address

IP addresses have a hierarchical design similar to that of telephone numbers. For example, a 7-digit telephone number starts with a 3-digit prefix that identifies a group of thousands of telephone lines, and ends with four digits that identify one specific line in that group.
Similarly, IP addresses contain two kinds of information:

- *Network ID*
  Identifies a particular network within the Internet or intranet
- *Host ID*
  Identifies a particular computer or system on the network

The first part of every IP address contains the network ID, and the rest of the address contains the host ID. The length of the network ID depends on the network's *class* (see following section). The table below shows the structure of an IP address.

	Field1	Field2	Field3	Field4
Class A	Network ID	Host ID		
Class B	Network ID		Host ID	
Class C	Network ID			Host ID

Here are some examples of valid IP addresses:
Class A: 10.30.6.125 (network = 10, host = 30.6.125)
Class B: 129.88.16.49 (network = 129.88, host = 16.49)
Class C: 192.60.201.11 (network = 192.60.201, host = 11)

Network classes

The three commonly used network classes are A, B, and C. (There is also a class D but it has a special use beyond the scope of this discussion.) These classes have different uses and characteristics.
Class A networks are the Internet's largest networks, each with room for over 16 million hosts. Up to 126 of these huge networks can exist, for a total of over 2 billion hosts. Because of their huge size, these networks are used for WANs and by organizations at the infrastructure level of the Internet, such as your ISP.

Class B networks are smaller but still quite large, each able to hold over 65,000 hosts. There can be up to 16,384 class B networks in existence. A class B network might be appropriate for a large organization such as a business or government agency.
Class C networks are the smallest, only able to hold 254 hosts at most, but the total possible number of class C networks exceeds 2 million (2,097,152 to be exact). LANs connected to the Internet are usually class C networks.
Some important notes regarding IP addresses:
The class can be determined easily from field1:

field1 = 1-126: Class A
field1 = 128-191: Class B
field1 = 192-223: Class C

(field1 values not shown are reserved for special uses)
A host ID can have any value except all fields set to 0 or all fields set to 255, as those values are reserved for special uses.

Subnet masks

Definition
mask

A mask *looks like a regular IP address, but contains a pattern of bits that tells what parts of an IP address are the network ID and what parts are the host ID: bits set to 1 mean "this bit is part of the network ID" and bits set to 0 mean "this bit is part of the host ID."*

Subnet masks are used to define *subnets* (what you get after dividing a network into smaller pieces). A subnet's network ID is created by "borrowing" one or more bits from the host ID portion of the address. The subnet mask identifies these host ID bits.
For example, consider a class C network 192.168.1. To split this into two subnets, you would use the subnet mask:
255.255.255.128
It's easier to see what's happening if we write this in binary:
11111111. 11111111. 11111111.10000000
As with any class C address, all of the bits in field1 through field3 are part of the network ID, but note how the mask specifies that the first bit in field4 is also included. Since this extra bit has only two values (0 and 1), this means there are two subnets. Each subnet uses the remaining 7 bits in field4 for its host IDs, which range from 1 to 126 hosts (instead of the usual 0 to 255 for a class C address).
Similarly, to split a class C network into four subnets, the mask is:
255.255.255.192 or 11111111. 11111111. 11111111.11000000
The two extra bits in field4 can have four values (00, 01, 10, 11), so there are four subnets. Each subnet uses the remaining six bits in field4 for its host IDs, ranging from 1 to 62.

Sometimes a subnet mask does not specify any additional network ID bits, and thus no subnets. Such a mask is called a default subnet mask*. These masks are:*

Note

Class A: 255.0.0.0
Class B: 255.255.0.0
Class C: 255.255.255.0

These are called default *because they are used when a network is initially configured, at which time it has no subnets.*

D Glossary

802.11 A family of specifications for wireless LANs developed by a working group of the IEEE. This in an Ethernet protocol, often called Wi-Fi.

10BASE-T A designation for the type of wiring used by Ethernet networks with a data rate of 10 Mbps. Also known as Category 3 (CAT 3) wiring. See *data rate, Ethernet*.

100BASE-T A designation for the type of wiring used by Ethernet networks with a data rate of 100 Mbps. Also known as Category 5 (CAT 5) wiring. See *data rate, Ethernet*.

ADSL Asymmetric Digital Subscriber Line
The most commonly deployed "flavor" of DSL for home users is asymmetrical DSL. The term asymmetrical refers to its unequal data rates for downloading and uploading (the download rate is higher than the upload rate). The asymmetrical rates benefit home users because they typically download much more data from the Internet than they upload.

analog An analog signal is a signal that has had its frequency modified in some way, such as by amplifying its strength or varying its frequency, in order to add information to the signal. The voice component in DSL is an analog signal. See *digital*.

ATM Asynchronous Transfer Mode
A standard for high-speed transmission of data, text, voice, and video, widely used within the Internet. ATM data rates range from 45 Mbps to 2.5 Gbps. See *data rate*.

authenticate To verify a user's identity, such as by prompting for a password.

binary The "base two" system of numbers, that uses only two digits, 0 and 1, to represent all numbers. In binary, the number 1 is written as 1, 2 as 10, 3 as 11, 4 as 100, etc. Although expressed as decimal numbers for convenience, IP addresses in actual use are binary numbers; e.g., the IP address 209.191.4.240 is 11010001.10111111.00000100.11110000 in binary. See *bit, IP address, network mask*.

DHCP Dynamic Host Configuration Protocol
DHCP automates address assignment and management. When a computer connects to the LAN, DHCP assigns it an IP address from a shared pool of IP addresses; after a specified time limit, DHCP returns the address to the pool.

DHCP relay Dynamic Host Configuration Protocol relay
A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the Commander Pulse's interfaces can be configured as a DHCP relay. See *DHCP*.

DHCP server Dynamic Host Configuration Protocol server
A DHCP server is a computer that is responsible for

	assigning IP addresses to the computers on a LAN. See *DHCP*.
digital	Of data, having a form based on discrete values expressed as binary numbers (0's and 1's). The data component in DSL is a digital signal. See *analog*.
DNS	Domain Name System The DNS maps domain names into IP addresses. DNS information is distributed hierarchically throughout the Internet among computers called DNS servers. For example, *www.yahoo.com* is the domain name associated with IP address 216.115.108.243. When you start to access a web site, a DNS server looks up the requested domain name to find its corresponding IP address. If the DNS server cannot find the IP address, it communicates with higher-level DNS servers to determine the IP address. See *domain name.*
domain name	A domain name is a user-friendly name used in place of its associated IP address. Domain names must be unique; their assignment is controlled by the Internet Corporation for Assigned Names and Numbers (ICANN). Domain names are a key element of URLs, which identify a specific file at a web site. See *DNS.*
download	To transfer data in the downstream direction, i.e., from the Internet to the user.
DSL	Digital Subscriber Line A technology that allows both digital data and analog voice signals to travel over existing copper telephone lines.
encryption keys	See *network keys*
Ethernet	The most commonly installed computer network technology, usually using twisted pair wiring. Ethernet data rates are 10 Mbps and 100 Mbps. *See also 10BASE-T, 100BASE-T, twisted pair*.
FTP	File Transfer Protocol A program used to transfer files between computers connected to the Internet. Common uses include uploading new or updated files to a web server, and downloading files from a web server.
Gbps	Abbreviation of Gigabits per second, or one billion bits per second. Internet data rates are often expressed in Gbps.
host	A system (usually a computer) connected to a network.
HTTP	Hyper-Text Transfer Protocol HTTP is the main protocol used to transfer data from web sites so that it can be displayed by web browsers. See *web browser, web site*.
Hub	A hub is a place of convergence where data arrives from one or more directions and is forwarded out in one or more directions. It connects an Ethernet bridge/router to a group of PCs on a LAN and allows communication to pass between the networked devices.

ICMP	Internet Control Message Protocol An Internet protocol used to report errors and other network-related information. The ping command makes use of ICMP.
IEEE	The Institute of Electrical and Electronics Engineers is a technical professional society that fosters the development of standards that often become national and international standards.
Internet	The global collection of interconnected networks used for both private and business communications.
intranet	A private, company-internal network that looks like part of the Internet (users access information using web browsers), but is accessible only by employees.
IP	*See TCP/IP*.
IP address	Internet Protocol address The address of a host (computer) on the Internet, consisting of four numbers, each from 0 to 255, separated by periods, e.g., 209.191.4.240. An IP address consists of a *network ID* that identifies the particular network the host belongs to, and a *host ID* uniquely identifying the host itself on that network. A network mask is used to define the network ID and the host ID. Because IP addresses are difficult to remember, they usually have an associated domain name that can be specified instead. See *domain name, network mask*.
ISP	Internet Service Provider A company that provides Internet access to its customers, usually for a fee.
LAN	Local Area Network A network limited to a small geographic area, such as a home or small office.
LED	Light Emitting Diode An electronic light-emitting device. The indicator lights on the front of the Commander Pulse unit are LEDs.
MAC address	Media Access Control address The permanent hardware address of a device, assigned by its manufacturer. MAC addresses are expressed as six pairs of hex characters, with each pair separated by colons. For example; *NN:NN:NN:NN:NN:NN*.
mask	*See network mask*.
Mbps	Abbreviation for Megabits per second, or one million bits per second. Network data rates are often expressed in Mbps.
NAT	Network Address Translation A service performed by many routers that translates your network's publicly known IP address into a *private* IP address for each computer on your LAN. Only your router and your LAN know these addresses; the outside world sees only the public IP address when talking to a computer on your LAN.
network	A group of computers that are connected together, allowing them to communicate with each other and share resources, such as software, files, etc. A network can be small, such as a *LAN*, or very large, such as the *Internet*.

network keys	(Also known as encryption keys.) 64-bit and 128-bit encryption keys used in WEP wireless security schemes. The keys encrypt data over the WLAN, and only wireless PCs configured with WEP keys that correspond to the keys configured on the device can send/receive encrypted data.
network mask	A network mask is a sequence of bits applied to an IP address to select the network ID while ignoring the host ID. Bits set to 1 mean "select this bit" while bits set to 0 mean "ignore this bit." For example, if the network mask 255.255.255.0 is applied to the IP address 100.10.50.1, the network ID is 100.10.50, and the host ID is 1. See *binary, IP address, subnet*.
NIC	Network Interface Card An adapter card that plugs into your computer and provides the physical interface to your network cabling. For Ethernet NICs this is typically an RJ-45 connector. See *Ethernet, RJ-45*.
packet	Data transmitted on a network consists of packets. Each packet contains a payload (the data), plus overhead information such as where it came from (source address) and where it should go (destination address).
pass phrase	A secret password used in *WPA* wireless data encryption. Encryption is based on a WPA master key that is derived from the pass phrase and the network name (SSID) of the device. The pass phrase should be at least 20 characters long in order to deter a hacker attempting to crack the pass phrase by recording a series of frames then trying commonly used passwords offline until one works (known as offline PSK dictionary attacks).
ping	Packet Internet (or Inter-Network) Groper A program used to verify whether the host associated with an IP address is online. It can also be used to reveal the IP address for a given domain name.
port	A physical access point to a device such as a computer or router, through which data flows into and out of the device.
PPP	Point-to-Point Protocol A protocol for serial data transmission that is used to carry IP (and other protocol) data between your ISP and your computer. The WAN interface on the Commander Pulse uses two forms of PPP called PPPoA and PPPoE. See *PPPoA, PPPoE*.
PPPoA	Point-to-Point Protocol over ATM One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoE. You can define only one PPPoA interface per VC.
PPPoE	Point-to-Point Protocol over Ethernet One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoA. You can define one or more PPPoE interfaces per VC.
protocol	A set of rules governing the transmission of data. In order for a data transmission to work, both ends of the connection have to follow the rules of the protocol.

remote	In a physically separate location. For example, an employee away on travel who logs in to the company's intranet is a remote user.
RIP	Routing Information Protocol The original TCP/IP routing protocol. There are two versions of RIP: version I and version II.
RJ-11	Registered Jack Standard-11 The standard plug used to connect telephones, fax machines, modems, etc. to a telephone port. It is a 6-pin connector usually containing four wires.
RJ-45	Registered Jack Standard-45 The 8-pin plug used in transmitting data over phone lines. Ethernet cabling usually uses this type of connector.
routing	Forwarding data between your network and the Internet on the most efficient route, based on the data's destination IP address and current network conditions. A device that performs routing is called a router.
SDNS	Secondary Domain Name System (server) A DNS server that can be used if the primary DSN server is not available. *See DNS*.
SSID	Service Set Identifier (also known as the Extended Service Set Identifier (ESSID)) is a unique identifier that differentiates one wireless device from another. Wireless PCs configured with the same SSID can access that device.
subnet	A subnet is a portion of a network. The subnet is distinguished from the larger network by a *subnet mask* that selects some of the computers of the network and excludes all others. The subnet's computers remain physically connected to the rest of the parent network, but they are treated as though they were on a separate network. See *network mask*.
subnet mask	A mask that defines a subnet. See *network mask*.
TCP/IP	Transmission Control Protocol/Internet Protocol The basic protocols used on the Internet. TCP is responsible for dividing data up into packets for delivery and reassembling them at the destination, while IP is responsible for delivering the packets from source to destination. When TCP and IP are bundled with higher-level applications such as HTTP, FTP, Telnet, etc., TCP/IP refers to this whole suite of protocols.
Telnet	An interactive, character-based program used to access a remote computer. While HTTP (the web protocol) and FTP only allow you to download files from a remote computer, Telnet allows you to log into and use a computer from a remote location.
TFTP	Trivial File Transfer Protocol A protocol for file transfers, TFTP is easier to use than File Transfer Protocol (FTP) but not as capable or secure.
TKIP	Temporal Key Integrity Protocol (TKIP) provides WPA with a data encryption function. It ensures that a unique master key is

generated for each packet, supports message integrity and sequencing rules and supports re-keying mechanisms.

triggers Triggers are used to deal with application protocols that create separate sessions. Some applications, such as NetMeeting, open secondary connections during normal operations, for example, a connection to a server is established using one port, but data transfers are performed on a separate connection. A trigger tells the device to expect these secondary sessions and how to handle them.

Once you set a trigger, the embedded IP address of each incoming packet is replaced by the correct host address so that NAT can translate packets to the correct destination. You can specify whether you want to carry out address replacement, and if so, whether to replace addresses on TCP packets only, UDP packets only, or both.

twisted pair The ordinary copper telephone wiring used by telephone companies. It contains one or more wire pairs twisted together to reduce inductance and noise. Each telephone line uses one pair. In homes, it is most often installed with two pairs. For Ethernet LANs, a higher grade called Category 3 (CAT 3) is used for 10BASE-T networks, and an even higher grade called Category 5 (CAT 5) is used for 100BASE-T networks. See *10BASE-T, 100BASE-T, Ethernet*.

unnumbered interfaces An unnumbered interface is an IP interface that does not have a local subnet associated with it. Instead, it uses a *router-id* that serves as the source and destination address of packets sent to and from the router. Unlike the IP address of a normal interface, the router-id of an unnumbered interface is allowed to be the same as the IP address of another interface. For example, the WAN unnumbered interface of your Commander Pulse uses the same IP address of the LAN interface (192.168.1.1).

The unnumbered interface is temporary – PPP or DHCP will assign a 'real' IP address automatically.

upstream The direction of data transmission from the user to the Internet.

USB Universal Serial Bus
A serial interface that lets you connect units such as printers, scanners, etc. to your computer by simply plugging them in.

VC Virtual Circuit
A connection from your DSL router to your ISP.

VCI Virtual Circuit Identifier
Together with the Virtual Path Identifier (VPI), the VCI uniquely identifies a VC. Your ISP will tell you the VCI for each VC they provide. See *VC*.

VPI Virtual Path Identifier
Together with the Virtual Circuit Identifier (VCI), the VPI uniquely identifies a VC. Your ISP will tell you the VPI for each VC they provide. See *VC*.

WAN Wide Area Network
Any network spread over a large geographical area, such as

	a country or continent. With respect to the Commander Pulse, WAN refers to the Internet.
Web browser	A software program that uses Hyper-Text Transfer Protocol (HTTP) to download information from (and upload to) web sites, and displays the information, which may consist of text, graphic images, audio, or video, to the user. Web browsers use Hyper-Text Transfer Protocol (HTTP). Popular web browsers include Netscape Navigator and Microsoft Internet Explorer. See *HTTP, web site, WWW*.
Web page	A web site file typically containing text, graphics and hyperlinks (cross-references) to the other pages on that web site, as well as to pages on other web sites. When a user accesses a web site, the first page that is displayed is called the *home page*. See *hyperlink, web site*.
Web site	A computer on the Internet that distributes information to (and gets information from) remote users through web browsers. A web site typically consists of web pages that contain text, graphics, and hyperlinks. See *hyperlink, web page*.
WEP	Wired Equivalent Privacy (WEP) encrypts data over WLANs. Data is encrypted into blocks of either 64 bits length or 128 bits length. The encrypted data can only be sent and received by users with access to a private *network key*. Each PC on your wireless network must be manually configured with the same key as your Commander Pulse in order to allow wireless encrypted data transmissions. Eavesdroppers cannot access your network if they do not know your private key. WEP is considered to be a low security option.
Wireless	Wireless is a term used to describe telecommunications in which electromagnetic waves (rather than some form of wire) carry the signal over part or all of the communication path. *See wireless LAN*.
Wireless LAN	A wireless LAN (WLAN) is one in which a mobile user can connect to a local area network (LAN) through a wireless (radio) connection. A standard, IEEE 802.11, specifies the technologies for wireless LANs.
WPA	Wi-Fi Protected Access WPA is an initiative by the IEEE and Wi-Fi Alliance to address the security limitations of WEP. WPA provides a stronger data encryption method (called Temporal Key Integrity Protocol (TKIP)). It runs in a special, easy-to-set-up home mode called Pre-Shared Key (PSK) that allows you to manually enter a pass phrase on all the devices in your wireless network. WPA data encryption is based on a WPA master key. The master key is derived from the pass phrase and the network name (SSID) of the device. It provides improved data encryption and stronger user authentication. The mode of WPA supported on your Commander Pulse is called Pre-Shared Key (PSK), which allows you to manually enter a type of key called a *pass phrase*.

WWW World Wide Web

Also called *(the) Web.* Collective term for all web sites anywhere in the world that can be accessed via the Internet.

E Configuring your PCs

This appendix provides instructions for configuring the Internet settings on your computers to work with Commander Pulse.

Configuring Ethernet PCs

To configure your PC to automatically obtain an IP address

By default, Commander Pulse automatically assigns the required Internet settings to your PCs. You need to configure the PCs to accept this information when it is assigned.

If you have connected your LAN PCs via Ethernet to Commander Pulse, follow the instructions that correspond to the operating system installed on your PC:

If you want to allow Wireless PCs to access your Commander Pulse, see section on *Wireless Setup / Security* on page 118.

Windows® XP PCs

1. In the Windows task bar, click the *Start* button, and then click *Control Panel*.
2. Double-click the Network Connections icon.
3. In the *LAN or High-Speed Internet* window, right-click on the icon corresponding to your network interface card (NIC) and select *Properties*. (Often, this icon is labeled *Local Area Connection*).

The *Local Area Connection* dialog box is displayed with a list of currently installed network items.

4. Ensure that the check box to the left of the item labeled *Internet Protocol TCP/IP* is checked and click *Properties*.
5. In the Internet Protocol (TCP/IP) Properties dialog box, click the radio button labeled Obtain an IP address automatically. Also click the radio button labeled Obtain DNS server address automatically.
6. Click *OK* twice to confirm your changes, and then close the Control Panel.

Windows 2000 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
2. Double-click the Network and Dial-up Connections icon.
3. In the *Network and Dial-up Connections* window, right-click the Local Area Connection icon, and then select *Properties*.

The *Local Area Connection Properties* dialog box is displayed with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 10.

4. If Internet Protocol (TCP/IP) does not display as an installed component, click *Install…*
5. In the *Select Network Component* Type dialog box, select *Protocol*, and then click *Add…*
6. Select *Internet Protocol (TCP/IP)* in the Network Protocols list, and then click *OK*.

You *may* be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.

7. If prompted, click *OK* to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by Commander Pulse:

8. In the *Control Panel*, double-click the Network and Dial-up Connections icon.
9. In the *Network and Dial-up Connections* window, right-click the Local Area Connection icon, and then select *Properties*.
10. In the Local Area Connection Properties dialog box, select *Internet Protocol (TCP/IP),* and then click *Properties*.
11. In the *Internet Protocol (TCP/IP) Properties* dialog box, click the radio button labeled *Obtain an IP address automatically.* Also click the radio button labeled *Obtain DNS server address automatically*.
12. Click *OK* twice to confirm and save your changes, and then close the Control Panel.

Windows Me PCs

1. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
2. Double-click the Network and Dial-up Connections icon.
3. In the *Network and Dial-up Connections* window, right-click the Network icon, and then select *Properties*.

The *Network Properties* dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 11.

4. If Internet Protocol (TCP/IP) does not display as an installed component, click *Add…*
5. In the *Select Network Component Type* dialog box, select *Protocol*, and then click *Add…*
6. Select *Microsoft* in the Manufacturers box.
7. Select *Internet Protocol (TCP/IP)* in the Network Protocols list, and then click *OK*.

You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.

8. If prompted, click *OK* to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by Commander Pulse:

9. In the *Control Panel*, double-click the Network and Dial-up Connections icon.
10. In *Network and Dial-up Connections window*, right-click the Network icon, and then select *Properties*.
11. In the *Network Properties* dialog box, select *TCP/IP*, and then click *Properties*.

12. In the TCP/IP Settings dialog box, click the radio button labeled **Server** *assigned IP address*. Also click the radio button labeled *Server assigned name server address*.
13. Click *OK* twice to confirm and save your changes, and then close the *Control Panel*.

Windows 95, 98 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
2. Double-click the Network icon.

The *Network* dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 8.

3. If TCP/IP does not display as an installed component, click *Add…*

   The *Select Network Component Type* dialog box displays.

4. Select *Protocol*, and then click *Add…*
5. Click on *Microsoft* in the Manufacturers list box, and then click *TCP/IP* in the Network Protocols list box.
6. Click *OK* to return to the Network dialog box, and then click *OK* again.

   You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.

7. Click *OK* to restart the PC and complete the TCP/IP installation.

Next, configure the PCs to accept IP information assigned by Commander Pulse:

8. Open the Control Panel window, and then click the Network icon.
9. Select the network component labeled TCP/IP, and then click *Properties*.

   If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.

10. In the TCP/IP Properties dialog box, click the IP Address tab.
11. Click the radio button labeled *Obtain an IP address automatically*.
12. Click the DNS Configuration tab, and then click the radio button labeled *Enable DNS*.
13. Click *OK* twice to confirm and save your changes.

    You will be prompted to restart Windows.

14. Click *Yes*.

Windows NT 4.0 workstations

First, check for the IP protocol and, if necessary, install it:

1. In the Windows NT task bar, click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double click the Network icon.
3. In the Network dialog box, click the Protocols tab.

   The *Protocols* tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to step 9.

4. If TCP/IP does not display as an installed component, click *Add…*
5. In the *Select Network Protocol* dialog box, select *TCP/IP*, and then click *OK*.

   You may be prompted to install files from your Windows NT installation CD or other *media*. Follow the instructions to install the files.
   After all files are installed, a window displays to inform you that a TCP/IP service called *DHCP* can be set up to dynamically assign IP information.
6. Click *Yes* to continue, and then click *OK* if prompted to restart your computer.

   Next, configure the PCs to accept IP information assigned by Commander Pulse:
7. Open the Control Panel window, and then double-click the Network icon.
8. In the *Network* dialog box, click the *Protocols* tab.
9. In the *Protocols* tab, select *TCP/IP*, and then click *Properties*.
10. In the *Microsoft TCP/IP Properties* dialog box, click the radio button labeled *Obtain an IP address from a DHCP server.*
11. Click *OK* twice to confirm and save your changes, and then close the Control Panel.

Assigning static Internet information to your PCs

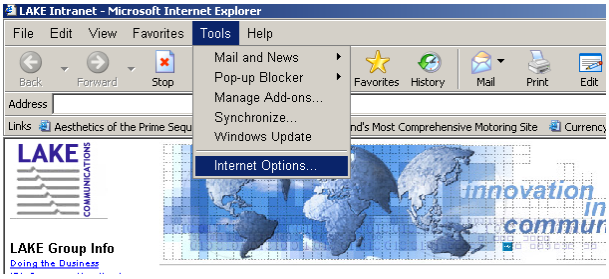
If you are a typical user, you will not need to assign static Internet information to your LAN PCs because your ISP automatically assigns this information for you.
In some cases however, you may want to assign Internet information to some or all of your PCs directly (often called "statically"), rather than allowing Commander Pulse to assign it.
This option may be desirable (but not required) if:
You have obtained one or more public IP addresses that you want to always associate with specific computers (for example, if you are using a computer as a public web server).
You maintain different subnets on your LAN (subnets are described in Appendix 0).
Before you begin, you must have the following information available:
The IP address and subnet mask of each PC
The IP address of the default gateway for your LAN. In most cases, this is the address assigned to the LAN port on Commander Pulse.
By default, the LAN port is assigned the IP address 192.168.1.1. (You can change this number or another number can be assigned by your ISP.)
The IP address of your ISP's Domain Name System (DNS) server.
On each PC to which you want to assign static information, follow the instructions relating only to checking for and/or installing the IP protocol. Once it is installed, continue to follow the instructions for displaying each of the Internet Protocol (TCP/IP) properties. Instead of enabling dynamic assignment of the IP addresses for the computer, DNS server and default gateway, click the radio buttons that enable you to enter the information manually.

Note

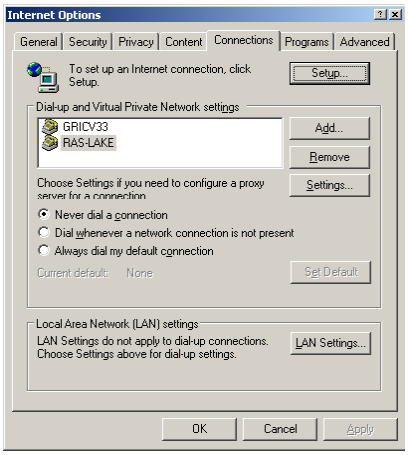
Your PCs must have IP addresses that place them in the same subnet as the LAN port.

Setting up your browser not to use a proxy server

1. Launch Internet Explorer.
2. Select *Tools*, *Internet Options.*

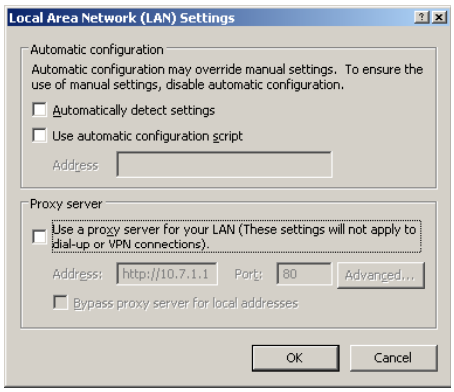


3. Select *Connections*


Internet Options
General Security Privacy Content Connections Programs Advanced
To set up an Internet connection, click Setup.
Setup...
Dial-up and Virtual Private Network settings
GRICV33
RAS-LAKE
Add...
Remove
Settings...
Choose Settings if you need to configure a proxy server for a connection
Never dial a connection
Dial whenever a network connection is not present
Always dial my default connection
Current default: None
Set Default
Local Area Network (LAN) settings
LAN Settings do not apply to dial-up connections.
Choose Settings above for dial-up settings.
LAN Settings...
OK Cancel Apply

If you have been using a dial up connection ensure the button *Never dial a connection* is selected

4. Select *LAN Settings.*


Local Area Network (LAN) Settings
Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.
Automatically detect settings
Use automatic configuration script
Address
Proxy server
Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).
Address: http://10.7.1.1 Port: 80 Advanced...
Bypass proxy server for local addresses
OK Cancel

5. Under Proxy Server, ensure that *Use a proxy server for your LAN* is unchecked.

F Troubleshooting

This appendix takes you through a step-by-step procedure to help you resolve problems that you may encounter when installing or using Commander Pulse.

Cannot browse the Internet

(1) Check the LEDs on the Commander Pulse front panel		
(a) *Is the Power LED on?*	***Yes***	*Go to* ***(b)***
	No	Verify that you are using the power cable provided and that it is securely connected to Commander Pulse and a wall socket/power strip.
(b) *For a wired PC* *Is the Ethernet LED on?*	***Yes***	*Go to* ***(d)***
	No	Verify that your PC is connected to LAN port 1, 2, 3 or 4 on the Commander Pulse using a Cat 5 patch cord or cable.
(c) *For a Wireless PC* *Is the Wireless LED Green?*	***Yes***	*Go to* ***(d)***
	No	Go to **(4) Check your WLAN settings**
(d) *Is the DSL LED on steady?*	***Yes***	Go to **(e)**
	No	The LED is flashing Verify that the ADSL port on the Commander Pulse is connected to the *computer* port on the splitter, and that the *line* port on the splitter is connected to the telephone line. If the above connections are correct, report the problem to your ADSL service provider.
(e) *Is the Internet LED Green?*	***Yes***	Go to **(3) Check your PC settings**

(1) Check the LEDs on the Commander Pulse front panel

No	The LED is Red. Go to ***(2) Check your ADSL settings***.

(2) Check your ADSL settings

(a) Enter the Commander Pulse Main menu

- Select Router Configuration
- Select ADSL Modem
- click Change the ADSL Modem settings here …
- Select PPPoA
- click Next
- Enter PPP Username, PPP Password, retype password
- click Next
- Select Manual
- enter VPI = 8, VCI = 35
- click Next
- Click Confirm Changes

(b) *Is the Internet LED on the Commander Pulse front panel Green?*	***Yes***	Go to **(c)**
	No	The LED is Red Contact your ADSL service provider and confirm that your *PPP Username* and *Password* are correct.
(c) *Can you browse?*	***No***	Go to ***(3) Check your PC settings***.

(3) Check your PC settings

Configuring the PC settings for Windows XP are described below. For other operating systems, refer to **Appendix D, Configuring your PCs**.

- Click *start*
- Click *Control Panel*
- Double click *Network Connections* icon
- Double click *Local Area Connection*
- Under *General* tab
  click *Properties*
- Under *General* tab
  scroll down and highlight *Internet Protocol (TCP/IP)*
  click *Properties*
- Under *General* tab
  select *Obtain an IP address automatically*
  select *Obtain DNS server address automatically*
  click *OK*

(4) Check your WLAN settings

The following procedure assumes that the WLAN has been set up with WPA security.
If a different security configuration has been set up, refer back to Section 10 Wireless Setup/Security

(a) Enter the Commander Pulse Main menu

- Select Wireless Settings/Security

In General Settings

(b) *Is Wireless network enabled ?*	***Yes***	Go to **(c)**
	No	• Click Enable or disable the wireless network here … • Select Enable • Click Next • Go to **(c)**

(c) Make a note of the Network Name

(d) Select

Allow Commander Pulse to select a channel

(e) Select

Wi-Fi Protected Access (WPA) on the wireless network

Enable SSID Broadcast

(f) Re-enter the Pass Phrase and make a note of it

(g) Select

Allow any Wireless PCs to connect

Confirm changes

Restart the Commander Pulse

(h) Is the Wireless LED on the Micro Green ?	**Yes**	Go to **(1d)**
	No	Go to **(5) Check your Wireless PC settings**

(5) Check your Wireless PC settings

The following procedure is for a PC with an Intel (PRO) Wireless Network adapter that has been set up for WPA security.
For other Wireless Network adapters, consult the manufacturer's user manual. Note that some older wireless adapters do not support WPA.

- Click *start*
- Click *Control Panel*
- Double click *Network Connections* icon
- Double click *Wireless Network Connection*
- Under *General* tab
  click *Properties*
- Select *Wireless Network* tab
  highlight the network name noted in **(4c)**
  click *Properties*
- Under *Association* tab
  set Network Association to *WPA-PSK*
  set Data Encryption to *TKIP*
  re-enter the Network Key (this is the Pass Phrase noted in **(4f)**)
  confirm the Network Key
  click *OK*

Problem(s)	Possible Causes	Solutions
No dialing tone when pressing .	You are too far from the base unit. - Battery is low (low battery icon is displayed).	Move closer to the base unit. Charge the battery.
icon is flashing.	- The handset is not registered. If the handset is unregistered, it displays UNREGISTERED. - The handset is out of range.	- Register the handset. See page - Move closer to the base unit.
When the handset is placed on the charger, no beep is heard.	- The handset is not placed properly on the base unit or charger. - The charging contacts are dirty. - The handset tone is turned off. - The handset's power is turned off before placing it on the charger.	- Take the handset off the base unit and put it back again. - Clean the charging contacts with a clean and dry cloth. - Turn on the handset tone from the Sounds Menu.
Battery icon remains empty although the handset has charged for 24 hours.	- Handset battery is defective. - Handset is not placed properly on the base unit or charger.	- Please contact your supplier to purchase a new rechargeable battery. - Check to make sure the battery icon is scrolling.
No symbol on the display.	- Battery is uncharged.	- Charge battery.
Bad audio quality (crackles, echo, etc.)	- Interference from nearby electrical appliance. - Commander Pulse unit is installed in a room with thick walls. - The handset is too far from the base unit.	- Try plugging the base unit to a different location. - Install the base unit in a different room. - Move closer to the base unit.
The phone does not ring when a call comes in.	- The ringer is turned off. - The phone is not programmed to ring	- Turn on the ringer. - Program the phone to ring for Incoming Calls. See Page 98 or 160.

No incoming calls
Check that all phones programmed to ring are not programmed for DND or Forward.

External calls blocked
If you cannot get outgoing access on a 2-wire telephone, move a keystation to the station. If it shows EXTN LOCK, the station has been locked and you will need the unlock code to unlock it. See station lock on Page 64.

No station dial tone
Check that the station has not been disconnected through programming. See page 103 for programming from the management application and page 174 for programming from the programming keystation.

Not seizing a line for outgoing calls
Check if the line is equipped in programming. See page 108 for programming from the management application and Page 173 for programming from the programming keystation.
Check that the key is programmed for line access, see keystation key programming on page 39.

Door station not operating
Check the programming for the door station, see Page 100 for programming from the web management application and Page 172 for programming from the programming keystation.

Phone reset
Remember the simple phone reset code 739, which can be dialed from any station phone.

CND Store is showing answered calls only. I want all calls to be shown
With CND activated in both the telephone exchange and on the Commander Pulse you can choose to have all incoming callers telephone numbers added to a ‘CND Store' or just the unanswered calls. These can be viewed on the Commander Pulse keystation.
In default the system is set to only store unanswered calls. This can be changed in System Programming see page 157.

Power Fail problems
If there is no electrical mains power connected to your Commander Pulse and you wish to make or receive external calls, you will need to connect a standard telephone in to the Power Fail socket found on the back of the Commander Pulse. There will be no internal service, no Broadband connection, Wireless LAN access or DECT Handset service until the power is restored.

CND is not working

For CND service to work on standard CO lines it has to be enabled in both the telephone exchange and on the Commander Pulse system. If the service is provided on the CO line it must be programmed in the Commander Pulse. See page 109 for programming from the Management Application and Page 177 for programming from the programming keystation.

When setting the system time it does not update immediately

The time and date will not change until all external calls in progress when the programming change is made have finished.

Is there any way of retrieving deleted messages?

Unfortunately there is no facility to retrieve DELETED Voicemail messages.

Noise from the Keystation speaker.

There is an option on the BT Micro system to play the music you provide for music on hold through the keystation speakers when the keystation is not being used. This feature can only be used when you provide an external music source. If the feature is turned on and an external music source is not provided the Keystation speakers may make a low-level noise. To stop this, program the feature off. Do this by selecting the Program key on the Keystation, scroll down and select 'Background music' and select the 'OFF' option.

Keystation not working in another station

If the Commander Pulse system wiring has been extended a Keystation can only be connected to any of the other hard-wired stations if the correct wires have been extended through to the telephone socket. The Keystation requires more wires to work than an ordinary telephone. See page 17 for wiring instructions.

Keystation ‘Speakerphone’ does not appear to work

The keystation has probably been programmed for headset use. Select the Program key and scroll to Headset mode. Select Headset mode and select Headset off. Headset mode should only be set on when a headset is connected to the headset connection on the Keystation and this is to be used instead of the handset.

Commander Pulse Owner's Manual
® Commander is the registered trademark of Commander Australia Limited ACN 082 384 343. Printed by LAKE Communications. Part No. 2770.09540.This manual is not to form part of any order or contract. The telecommunications services described in this publication are subject to availability and may be modified from time to time. Commander reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

CDR1187 04/06 S/I 761/85

Version 1, Release 1, May 06

COMMANDER®
360° communication